



Carrot and stick: Peter Aspdon meets BHIKHU PAREKH, former vice-chancellor of Baroda University in India... Tilting lances: Paul Giddens talks to TONY FIDDELS, pledged to promote sociology at Cambridge (page 13)

After the GREEN PAPER: John O'Leary discusses the pursuit of "value for money" (page 14) while Sir Edward Parkes, A. H. Halsey and Bob Smith give their reactions to Government proposals (page 15)

Charlatan or natural successor to Freud? In the second of our series on FREUD'S LEGACY, Darian Leader looks at the controversial career of French psychoanalyst Jacques Lacan (page 16)

Elemental particles: R. L. Willson reviews the contribution of FREE medicine (page 18)

ARTS: Francis Bacon's humane interiors at the Tate... Hugh Canning reports from Alderbury on a student production of Handel's opera Rodelinda (page 19)

In the past 10 years, debate about the POLICE has become intensely politicized. The issues at the heart of policing are in danger of disappearing behind the headlines; serious research is in short supply. P. A. J. Waddington reviews three important new studies (page 20)

Home news	1-9
Letters to the editor	2
antithesis	3
Don's Diary (John Pick)	4
Party Line (Jack Straw)	6
Union View (AUT)	8
Overseas news	10-11
Articles	12-18
Column (Ernest Boyer)	14
Arts	19
Books	20-28
Education books	24-28
Noticeboard	29
Classified advertising	30-39

NEXT WEEK

The special relationship: American studies in Britain
Profile of David Riesman
Engineering books
John Elsworth on Mikhail Bakhtin



HIGHER EDUCATION SUPPLEMENT
Priory House, St John's Lane, London EC1M 4BX. Telephone 01-253 3000

Humanities' high places

If the recent Green Paper is a sure guide the prognosis for the humanities is gloomy. The immediate impression is one of non-accidental neglect. A few perfunctory words of doubtful support, the effect of which is immediately and decisively devalued by the pervasive philistinism of the rest of the document; a short paragraph that rejects the case for a humanities research council made in the Leverhulme report, maybe a bad idea but one worth serious discussion against the background of the strong utilitarian drift of research policy; and another which appears to equate the health of the humanities in higher education with the velocity of inter-library loans.

But the most damaging message of the Green Paper is its apparent assumption that the study of arts subjects should be confined to a smaller number of much better qualified students. One source of this assumption, of course, is the Government's determination to push more students into science and technology. For the Department of Education and Science (and the University Grants Committee?) this will have the indirect but not unwelcome effect of reducing the number of arts places and so increasing the competition to fill them. Probably another source is a more private but also more deep-seated prejudice. This is that while the humanities may be suitably rigorous intellectual instruments for the higher education of very able students, and (this bit in a whisper) should continue to form the core made available to the mass of more ordinary students.

To accept this assumption without protest would be in the interests of neither higher education nor the humanities. Any active policy based upon it would impoverish both. The effect on higher education would be startling but simple to describe. History, literature, philosophy and the rest would be confined more and more to the universities as the number of places in these subjects was restricted and entry standards soared. But not just to any university, because the UGC's determination to get rid of "small departments" which will have a much larger impact on arts than science would encourage a still greater concentration of humanities in a smaller number of universities with well-established reputations, and matching resources, in these subjects.

So a double concentration of the humanities would take place, in universities rather than polytechnics and colleges and in "strong" (and more traditional?) arts universities rather than "weak" (but more adventurous?) ones. One result would certainly be a sharper division between that part of the humanities that, although cut back in size and scope, remained as secure or secure than ever within its traditional academic defences and those isolated and vulnerable arts courses which survived at least for a while in colleges of higher education that could not easily retreat to the safety of a more practical and more vocational role.

But a more serious result would be the effective abandonment of any ambition to maintain the polytechnics as a credible alternative to the universities. For stripped of all accretions the

polytechnic policy established in the mid-1960s is based on a simple idea: that the university is no longer the only conceivable model for a fully mature institution of higher education. Yet if it is to become official policy that the humanities, and presumably some of the social sciences, have no place in the polytechnics, then their claim to be or to be becoming fully mature institutions is exposed as hollow. After all, the belief that only those institutions with a near-comprehensive range of subjects can sustain this claim is enshrined in both the Latin origin of "university" and the Greek roots of "polytechnic".

Some more short-sighted polytechnic leaders may be prepared to see the development of their institutions almost exclusively in the context of science and an even smaller bit of social science in support. If this perspective is generally accepted, the future of the polytechnics is as a second generation of technological universities. That would be a truly limited ambition. It would mark the end of a bold experiment in extending the diversity of higher education beyond the university boundaries so carefully respected up to the 1960s.

Those in the polytechnic "mainstream", in engineering, business and the rest, should recognize that the credibility of their claim to offer a more relevant and more accessible alternative to university practice depends crucially on the binary configuration of higher education, and of polytechnics as the "practical" alternative to the "theoretical" universities. Far from weakening the position of the polytechnics, the presence of arts and social sciences within them underpins their larger claims.

The effect of the threatened concentration on the humanities themselves would be more subtle but even more damaging. For it would restore the elitist and reductionist position of these subjects, both would be damaging not only in social but also in intellectual terms. The social objections to a restored elitism are easy to grasp. It is no longer realistic to pretend, even privately, that the study of the humanities can remain the core of the higher education of a post-industrial elite. The classics, history, literature, philosophy do not provide sufficient intellectual equipment to shape a technological future. In this respect the ambition of the humanities has had to become more limited - to civilize the technocratic elites of the future. This they can do by engaging their familiarity or provoking their guilt. But the humanities can no longer insist.

A second objection is almost as important as the first: we are ever to move beyond the twin ideas of higher education for an elite and of advanced training for experts towards the more generous idea of higher (or maybe continuing) education for the common people, as the Americans have done, the humanities will have a crucial role to play. For they would form an inevitable part of the "core curriculum" of a more popular system of higher education, as they have continued to do in schools even in this drearily mechanistic age.

But the intellectual objections to a reinforced academism in the humani-

ties are even stronger. Although good research and better scholarship are needed as much in the arts as in the sciences, the humanities must always have larger ambitions than narrow scholastic success. In a controversial essay published more than 20 years ago George Steiner wrote: "To teach literature (he could as well have said history or philosophy) as if it were some kind of urbane trade, or professional routine, is to do worse than teach badly. To teach it as if the critical text were more important, more profitable than the poem, as if the examination syllabus mattered more than the adventure of personal discovery, of passionate digression, is worst of all."

The progress and priorities of the best scholarship in most arts subjects is uniquely shaped by the experience of teaching - and maybe particularly by teaching less orthodox students who are not 18-year-old A level success stories. It is from within the teaching context that some of the most creative areas of intellectual inquiry have arisen. The experience of responding to the new demands made by successive generations of students, and by new types of student, is a dynamic force within most of the humanities, a counterweight to the forces of stability, inertia even, represented by the organization of the academic profession and the inherited traditions of individual disciplines.

Any reconcentration of the humanities back into the more traditional patterns of tradition and specialization would inevitably favour Oxford, Cambridge, London and the older universities, which have least need to re-examine the role of the humanities in the context of the changing culture of their students, and discriminate against the polytechnics and colleges which have been forced to engage most directly the pressures for new approaches to the humanities. This would be a depressing outcome. For the humanities require constant redefinition and reordering. They are shaped by the achievement of the past and our appreciation of that achievement.

The gap between the narrow view of the humanities expressed in the Green Paper and their true potential in a troubled late 20th century society can, not too fancifully, be compared to the gap between Isabel Archer and Gilbert Osmond in Henry James' *The Portrait of a Lady*. "They attached such different ideas, such different associations and desires, to the same liberty," wrote James. "Her notion of the aristocratic life was simply the liberty of a thing of forms, a conscious, calculated attitude."

A few pages earlier in the novel Isabel recalls how she had looked forward to "the infinite vista of a multiplied life" but had found herself instead in a dark, narrow alley with a dead wall at the end. "Instead of leading to the high places of happiness into realms of restriction and depression," she wrote. "The choice facing the humanities is the same, between the high places of happiness and the realms of restriction."

Isabel's real case for the London Institute is simple and positive. Surely there is a strong aesthetic, intellectual and administrative case to be made for the creation of Britain's first art and design polytechnic?

But both criticisms, shorn of their pejorative language, can be turned round. There can be no doubt that London's art colleges are badly in need of rationalization. A quick glance at their



Fifth Column

The decision about the Maudsley House Inquiry deserves cheers, possibly only two. It was a great step with a great cast of serious characters, uttering great expressions of passion and piety - a story of swayed between extremes of profundity and utter absurdity.

The problem was relatively simple. Peter Palumbo, a child prodigy in the coarse and cynical ranks of property development, had decided at school that Miles van der Robe must have a building in the City at the age of 26 approached the great man for a scheme. Miles van der Robe was then 75 years old. He produced ideas for a tower and a square and lot of facilities under it. He then died.

At almost the same time the scheme was granted planning permission in principle. That was a half that has caused endless problems in the City: planning permission in principle created fortunes in the 1960s and enabled land to change hands with ever increasing valuations. It was one of the prime targets for change in the conservation movement of the 1970s.

But Palumbo was not one of the manipulators. He just wanted to build. He spent about 2 years acquiring virtually all the land and leaseholds necessary to enable him to proceed with a project.

But by now of course attitudes had changed and the City Corporation rejected the scheme in 1982. So the Royal Fine Art Commission and many of the best people, who might have no power but had strong views (including the writer of this column), the inquiry that followed ventilated every possible argument and the Inspector ended by taking the right decision.

Like all problems that seem simple at first this one involved several issues. One was the tower, how people thought that a good idea was if they didn't like the tower. On the other hand the square would destroy the old (medieval) street pattern.

I cannot pretend that I have ever found the street arrangements in London so exciting that they cannot be improved. Sir Christopher Wren tried after the Fire to straighten it all out and failed; nothing is more conservative than money.

I know that my architectural view border on heresy but the fact is that I believe Miles van der Robe was a grossly overrated architect, whose influence has been almost totally malign. In his heyday at the Bauhaus he had a simple idea for a pavilion, a house and a chair and was encouraged to believe that he had discovered a universal formula for the creation of a whole civilization.

When I was in Chicago a few years ago I made a point of seeing all his buildings and got into most of them, including the celebrated Lake Shore Drive apartments. It was a depressing experience. Complex problems (like living) are not resolved by simplistic solutions.

Acceptance of the Miles scheme for Mansion House Square would have been utterly retrograde. Even architects have learned a lot in the last 20 years. And London has surely been battered enough.

Patrick Nuttgens

© TIMES NEWSPAPERS LTD. 1985
Published by Times Newspapers Ltd., P.O. Box 2, 20, Gray's Inn Road, London WC1X 8BT.
Typesetting by Computer Typesetters Ltd., 25, Abchurch Lane, London EC4N 3DF, and printing by Northampton Newsprint, Northampton.
NN1 3JH. Printed by J. W. Jones, 1985. Registered at the Post Office. ISSN 0959-5295.

The Times Higher Education Supplement

June 14, 1985 No 658 Price 60p

Short time lecturers waste millions, charge auditors

by David Jobbins

Millions of pounds could be saved if college lecturers abandon local agreements which limit their teaching hours, the long awaited report from the Audit Commission will say when it is published next week.

The report will draw attention to wide variations between local agreements covering the hours lecturers spend in class contact and the nationally-agreed maxima. By adopting its proposals, it says, £250,000 could be saved on the budget of every college in the country.

Its findings, the result of a comprehensive investigation of the further and higher education service by specially-commissioned firms of accountants, are awaited with trepidation by college principals and union leaders.

They fear that the commission's approach, symbolized by the report's title, *Obtaining Better Value From Further Education*, will be based on a too mechanistic approach to cost saving and a lack of recognition of the educational issues.

The commission believes a shift to the most favourable application of the Burnham system on class contact hours and grading of staff would save £150 million in teaching costs alone.

Although there are signs that the final version of the report has been toned down on the issue of class contact, local government leaders fear it may provoke a political storm which could thwart their latest initiative designed to end the deadlock over negotiations on pay and salary structure.

Union leaders and Mr John Pearson, leader of the employers' side of the Burnham Further Education Committee, are to meet later this month to pick up the pieces in the negotiations which faltered several weeks ago.

They hope the discussions will lead to the resumption of full scale negotiations with the Burnham Further Education Committee on the basis of an improved offer which will be acceptable not only to the Association of Metropolitan Authorities, but to the Association of County Councils.

NAB attempts to rescue colleges

by John O'Leary

Leaders of the National Advisory Body will make a personal appeal to Sir Keith Joseph, Secretary of State for Education and Science, for £550,000 to pay for increased teacher training intakes before any firm decisions are taken on college closures.

The NAB board this week put off a debate on the details of a new allocation of teacher training places until the consequences for other courses are fully established. If Sir Keith refuses to provide additional resources, up to 25 colleges - mainly in the humanities and other non-vocational areas - may have to close.

Officials are to produce alternative proposals for finding 550 places to compensate for the increases, either by spreading the cuts thinly throughout the public sector or by ordering the closure of whole courses. They will also ask the board to advise on whether all institutions should be included in the exercise or only those involved in teacher education.

The delay means that the three colleges and one polytechnic department recommended to lose initial teacher training courses must wait until September to hear their fate. The board will make its proposals at the end of next month, but no meeting of

whose Conservative leadership blocked a deal last March.

Mr Pearson said: "I am more optimistic we can get somewhere. I hope the outcome of the Audit Commission's investigation is neutral in terms of the pay discussions. It would be very unfortunate if it prejudiced anything we were discussing."

The commission's accountants looked in great detail at lecturers' teaching hours and the disparities between local practice and the national agreement.

A draft of the commission's report says that if only one third of the 30,000 senior lecturers in the system were not fully utilized but had been promoted solely because more than 50 per cent of their time as senior lecturers was on advanced work, almost £16 million in terms of class contact was lost each year.

One college was said to stand to "gain" £1 million a year if its locally-agreed class contact hours were brought to the national maxima. At another, £235,000 saving was thought



David Riesman: prophet of the lonely crowd, 12

Super computer cash plea

British will lag behind its scientific competitors without a big investment in a state-of-the-art super computer, a working party of the Advisory Board for the Research Councils will tell the board next month.

The group will point to large sums being diverted to new computer centres in France and the United States, giving researchers access to machines ten times as fast as the Cray computer at the London Regional Computer Centre which is the most powerful machine open to UK users.

The working party, chaired by Professor John Forty of Warwick Uni-

possible if remission was "brought under control".

Thirty per cent of colleges could save over £500,000 a year by moving to the nationally-agreed hours. Other areas where the commission will call for greater efficiency are cost recovery, non-teaching and administrative costs and marketing.

Mr David Humphreys, principal of Stockport College of Technology, said: "The auditors seem concerned about the teaching activities of their academic staff and largely ignore the activities which buttress teaching. Increasing teaching hours and reducing remission must have the effect of reducing the capacity of staff to provide the essential academic support services."

Although the final version of the report is understood to acknowledge lecturers' vital tasks outside the classroom, this is felt by informed sources to be unlikely to dilute the general thrust of the criticisms, which will undoubtedly be seized on by ministers and some local authorities anxious to make economies.

Natfie has so far fought off attempts by a number of authorities unilaterally to move from favourable local agreements on contact hours to the higher levels of the national agreement.

Some principals believe that renegotiation at national level is the only solution, but are sceptical that changes can be made within the three-year target period set by the commission for implementing its proposals.

As a highly critical report on the Scottish Education Department's control of teacher training colleges was issued this week by the Comptroller and Auditor General.

It concludes the taxpayer is not getting value for money from the seven colleges and that to keep open half-empty colleges is a waste of public money.

The powerful all-party Public Accounts Committee of the House of Commons is to question Mr James Scott, secretary of the SED, on the report on June 26.

TESS



The Oxford Union's attempt to help thaw relations between East and West by hosting a debate on the "Star Wars" defence initiative collapsed when the Soviet delegation pulled out at short notice.

But the event went ahead before a full house with the American team of Mr Paul Nitzze, President Reagan's special arms control adviser, Dr Edward Teller, inventor of the H-bomb and Senator Malcolm Wallop, who started the space-based laser programme, making statements and fielding questions.

Pictured here are (left) Dr Teller, Mr Neil Sherlock, the Oxford Union Society president, Mr Nitzze and Senator Wallop.

Sir Keith unlikely to favour poly freedom

The Lindop committee's central recommendation that a few polytechnics should be freed from any form of external validation seems unlikely to be accepted in its present form by Sir Keith Joseph, the Secretary of State for Education and Science.

The Government's verdict on Lindop, which is expected in the autumn, is more likely to favour loose-rein accreditation of polytechnics and intensified scrutiny of all their courses by HM Inspectorate.

But the National Advisory Body this week drew back from its expected outright opposition to the Lindop plan to free some polytechnics from the control of the Council for National Academic Awards. After a vigorous debate the board declined to endorse a critical draft produced by the NAB's officers.

This draft had concluded that the accreditation of courses, subjects and even whole institutions would provide a better balance between freedom and accountability than the Lindop plan for selective autonomy.

"The proposal for autonomy on validation does not provide such a balance and negates our recommendations on quality assurance in our published advice to the Secretary of State. The arguments set out in the report are weak and confused and the proposals should not be accepted."

This six-page paper had already been toned down once. Now Mr John

Bevan, the NAB secretary, and his officers have been asked to do another go. This third draft, which will simply summarize the opposing arguments for and against Lindop, will then have to be approved by Mr Christopher Ball, chairman of the board.

It will be discussed at the July meeting of the NAB committee. The committee may either endorse the draft as it stands or choose between the opposing versions. If the committee does take a positive line it is almost certain to be opposed to Lindop.

Already there is growing concern in the Department of Education and Science that the Lindop formula as it stands leaves too little scope for the active scrutiny of standards to which ministers are very much committed.

Little weight is being attached to the safeguards provided for in a strengthened external examining system on which the Lindop proposal relies. There is also unease about the ability of the inspectorate to fill quickly enough the vacuum that would be created by the complete eviction of the CNA.

Although under the new senior chief inspector, Mr Eric Bolton, the inspectorate has made a scrutiny of non-university higher education a major priority, it already has its hands full with its comprehensive inspection of initial teacher training, an even higher priority in the eyes of the Secretary of State.

Exeter alone gets CATE seal of approval on training

by Patricia Santinelli

Exeter University is the only institution out of the first nine examined by the Government's new accreditation body to have gained an outright recommendation for approval by the Secretary of State for Education.

The Council for the Accreditation of Teacher Education has told the university that approval is being given in the understanding that its department of education runs a 36-week PGCE course from 1986. As this is already scheduled to take place, it is a more formality. CATE has said it is satisfied with Exeter's primary and secondary BED.

The other institutions involved - Newcastle University, Kingston and Middlesex Polytechnics, Humber, Hertfordshire and Rolle colleges -

have all been given a year to meet a variety of conditions before they can be considered for approval.

The fate of two other colleges remains unknown or undecided. Breton Hall College had not received its letter this week, and Chelmer Institute has been asked to submit additional material, but is quite optimistic about the outcome.

Ironically, Hertfordshire College, whose threatened closure was postponed by the National Advisory Body's board this week, has only been asked to extend its PGCE by one week to 36 weeks, and set up local committees. In fact the latter has been delayed by the NAB exercise.

Newcastle University, which has been asked to make four amendments, is also requested to move to a 36-week

PGCE, something it is already fairly close to doing. It says however that it is extremely concerned at the council's persistent lack of recognition of the financial implications.

On another criticism, that of involving practising teachers in the selection of students, the university says this is already being done in the case of primary admissions and will be expanded, with some reluctance, to secondary students.

A major sticking point, and one affecting four institutions, has been CATE's insistence on two years' full-time study of a special subject at a level appropriate to higher education. As a result of this, Kingston Polytechnic has been asked to substantially restructure its primary BED, only 12 months after it received a glowing

report on its courses from Her Majesty's Inspectorate, and had met some of the points they made on structuring its course.

Similarly affected are Middlesex Polytechnic, and Humber and Rolle Colleges. In the case of Humber, it means going back to the Council for National Academic Awards only a few months after having been given validation.

CATE also decided that four institutions did not meet the criteria on recent school experience for staff. When the council was set up, it made it quite clear that one could not expect institutions to meet this in a short time. Now it appears to have given Newcastle University, Middlesex Polytechnic and Humber and Rolle Colleges one year to do so.

Letters to the editor

Reservations over black-only access

Sir, - The letter from Fernandes and Moos (THESE, June 7) is wrong about the Polytechnic of North London. We did not refuse a black-only access link with Kilburn, we already run three such black-only courses as part of our ethnic minority entry programme. We welcomed the proposal but had some reservations about it. For example, we were concerned about two of the aims of the proposed course. These were: "to give students the courage and confidence to resist and challenge racism" and "to prepare students to take leading roles in opposing racism

and other forms of discrimination". In our view these are not academic aims, and if they are to be accepted on other grounds, we wanted to know how Kilburn proposed to assess student achievement in these areas.

During discussions we mentioned that we had experienced some problems in placing black students from certain courses. We are not complacent about this and of course we challenge racism when we meet it. But this is a factor which has to be taken into account when advising students which courses to take.

The writers are quick to criticize others but they offer little that is constructive themselves. If appointing a black principal does not resolve racism, then surely neither does expelling one student who holds racist views? And to object to collecting ethnic minority statistics just because a local authority might use data collected as an excuse not to take real action is odd. Should we therefore not collect data and act without knowing what we are doing?

The writers rightly object to bureaucratic and paper exercises but I

am not sure how their call for a committee "to work to mobilize union members to combat racist practices" would help either. The problem is not trying to get union members to act, those I know have no lack of commitment to anti-racist action: the question we face is - what constitutes appropriate and effective anti-racist action? This is what we need to concentrate on.

Yours sincerely,
JOHN BEISHON,
Director,
The Polytechnic of North London.

Quality of teaching

Sir, - It was with great concern that I read Karen Gold's article "Teaching training below par" (THESE, May 31). Kingston Polytechnic was the first teacher training institution to be reported on by Her Majesty's Inspectorate. I reproduce below the second report dealing with the quality of teaching here.

In the course of their visits to the polytechnic, HMI observed a variety of teaching and learning styles. In the majority of cases these were appropriate. There were good examples of straight lectures which were well planned and carefully presented in a lively and stimulating way with appropriate use of visual aids. Tutors generally showed competence and confidence in their subject matter and were able to convey their enthusiasm to the students. The example of badly organized and poorly presented lectures were rare. The pace of some teaching was too slow and some sessions were dull and didactic. Tutors were happy to be questioned and challenged by the students, even in a formal situation, and they were usually sensitive to the ability level of the group. There might be some consideration, however, of the extent to which tutors need to give information to students, particularly on the short PGCE course. Postgraduate students should be capable of gathering essential factual information through their own reading - provided that adequate study time is programmed.

Other forms of teaching seen included seminar work with either the tutor or the students presenting a topic to a group. Again, the tutor generally provided the students with models that they could use to limitate in schools. The success of this type of teaching lay, to a considerable extent, in the excellent relationships between staff and students. Some of the work was particularly valuable as a model for the classroom. In one history session, in which students were looking into the use of stories with secondary pupils, the tutor himself told a story in a lively way and then showed them how to prepare for such an activity; the session ended with a discussion on the exploitation of the story. Other sessions involved the students actively in the sort of practical work they would be likely to do with children. In the best examples the tutors encouraged their students to analyse the activities and their responses to them and to draw conclusions about their value. Though there were notable exceptions, tutors generally provided a good model for the students' own future teaching tasks.

These comments were made when HMI had spent a total of nearly 100 days in the faculty of education and must, we assume, represent a reliable assessment of the work seen.

Such generalized statements as those made in the expenditure report are damaging in the extreme, particularly when one sector is singled out in this way. They will also do little to help the recruitment required to produce increased numbers of primary teachers against the background of a declining 18-plus cohort of potential applicants.

Yours sincerely,
R. J. GODFREY,
Dean, Faculty of Education,
Kingston Polytechnic.

Sir, - The Government's Green Paper on higher education shows that the advice of the University Grants Committee has been rejected in the most humiliating and insulting way. Will the chairman and members of the UGC now have the moral courage to resign and help to lead the fight against the policy of malign neglect of education? Or will they offer the perennial excuse of intellectual collaborators - "we think the policy is misguided but only we are clever enough to carry it out successfully"?

Yours sincerely,
R. J. WOOTTON,
20 Cefn Esgrif,
Llanbadarn Fawr, Aberystwyth.

Joint research 'best way'

by Jon Turney
Science Correspondent

Britain needs to develop an effective scientific foreign policy to help exploit possibilities for international collaboration in research, according to Sir John Kingman, chairman of the Science and Engineering Research Council.

The growing importance of joint research was a prominent thread throughout a day's discussion of British research and development organized last week by the British Council for overseas research administrators and science counsellors.

Professor Kingman told the seminar the SERC had come to the conclusion that international collaboration was going to become the best way of pursuing science in many fields. But it was important not to follow a single blueprint for collaboration.

He argued that some projects, such as the next generation of high-energy physics machines, should now be planned on a world scale. This view was shared by Sir Peter Swinnerton-Dyer, chairman of the University Grants Committee, who said we would soon be able to afford only one high energy physics research institute to serve the whole globe.

However, Sir Robin Nicholson, chief scientific adviser in the Cabinet Office, was still sceptical about collaboration between continents. But he acknowledged the importance of joint projects.

Sir Robin stressed that joint projects should be considered on an equal footing with domestic competitors, and submission to the European Nuclear Research Centre (CERN) in Geneva. He said some of our partners had seen this as a sign of disenchantment with the European scene. "But we owe it to the scientific community to review it as rigorously as other activities."

Dr Harry Atkinson, director of science for the SERC and chairman of the European Space Agency, said there were disadvantages in collaborative projects. No scientists really liked to share use of facilities: long-term scientific and financial commitments reduced flexibility and scientific priorities were no longer chosen nationally.

He presented a longer list of advantages, including better access to world class facilities, scientific stimulation through wider contact and political gains.

CDP demands say in inquiry

by Karen Gold

The Committee of Directors of Polytechnics wants to push the public sector efficiency study towards a Jarrett-style internal inquiry with strong representation for them.

A special CDP committee has been set up to negotiate on the inquiry, which Sir Keith Joseph, the Secretary of State for Education and Science asked the National Advisory Body to set up. Its format will be decided by the NAB committee next month.

The CDP committee is seeking a meeting with Mr Peter Brooke, the under-secretary of state for higher education and NAB committee chairman. The polytechnic directors want a strong say in the inquiry's membership and its agenda. They also want "significant representation" on it, arguing that they are responsible for the management of the bulk of the country's advanced further education.

In particular the directors want the inquiry to consider the management problems of major public sector institutions and the best way for the relationship between the institutions and their local authorities to develop.

The directors have accepted that corporate status is not on the agenda, according to one. Nevertheless, they want the inquiry to draw on previous studies such as the Coopers and Lybrand inquiry done at Kingston Polytechnic which outlined an arm's-length relationship between it and the local authority in return for performance review.

The special CDP committee members are Dr Harry Law, CDP chairman and president of Portsmouth Polytechnic; Dr Peter Knight, the Birmingham Polytechnic director; Mr Eric Robinson, the Lancashire Polytechnic director; and Dr Bob Smith, the Kingston Polytechnic director.

The directors do not want the inquiry to reflect the balance of membership on either the NAB board or the committee, since they argue that neither of these has expertise in institutional management, nor will they have

to live with the consequences of an inquiry.

The CDP does not expect to win a similar victory to the universities, which were allowed to set up their own inquiry headed by Sir Alex Jarrett, chairman of Reed International and chancellor of Birmingham University. But they do expect their management view to be given considerable weight.

"If Jarrett was good enough for the universities, why isn't it good enough for the public sector?" asked one.

The CDP is expected to meet Sir Alistair Pilkington, chairman of the Council for National Academic Awards to discuss the Lindop report on public sector validation at its July meeting.

After considerable argument the CDP agreed a response to Lindop last week welcoming the report which recommends that some institutions should be set free from external validation, but leaving the door open for the CNA's latest proposals allowing institutions self-validation while keeping a national system of peer review.

London faces further confusion

London University's administration has been thrown further into confusion by the news that Professor Sir Randolph Quirk, its vice chancellor, was due to enter hospital this week for major cardiac surgery.

Sir Randolph, 64, was due to retire at the end of the academic year in time for his successor, Lord Flowers, to take up his appointment in September.

In ordinary circumstances, the university senate might be expected to ask Lord Flowers to take over the vice chancellorship at an earlier date, to ease the succession difficulties. But he himself has recently recovered from a heart attack and the senate might wish to allow him to complete his recovery over the summer.

London's problems have come at a bad time, with universities needing to make detailed responses this summer on their research plans, to comply with the University Grants Committee's new policy of selective funding.

The university's principal, Dr William Taylor is also due to leave at the end of the academic year to take up his new post as vice chancellor of Hull University. His successor has not yet been appointed.

Dr Alan Betts, the principal of the Royal Veterinary College, is the university's deputy vice chancellor and will act on Sir Randolph's behalf in the coming weeks. He said: "It is perfectly possible that Sir Randolph will be back at work before September - he is having a routine operation."

Principal 'misled staff'

by Olga Wojtas
Scottish Correspondent

Staff and students at Scotland's unique adult education college have expressed alarm over the college's management following the discovery of a £40,000 projected deficit.

The academic staff of Newbattle Abbey College near Edinburgh unanimously submitted a vote of no confidence in the principal, Mr Alexander Reid, to yesterday's board of governors meeting. Two thirds of the college's students have also said they have no confidence in the management of the college. The principal is recuperating from an operation, and the deficit was discovered by the academic staff only after the college's senior tutor, Mr David Turner, took over as acting principal six weeks ago.

Mr Reid was criticized two years ago in an HM Inspectorate's report which called for "forceful and adventurous leadership" which would command support and enthusiasm from staff and students. The relationship between the principal and tutors displayed "levels of insecurity which demonstrate a need for firmer leadership", it said.

A staff document says the principal of misleading staff and governors during the planning of the college's Open Learning Unit, whose director was appointed in January.

Mr David Geer, its director, has told the governors that Mr Reid was "irresponsibly premature" in appointing him before submitting a case for more staff to the college's major funding body, the Scottish Education Department.

Mr Geer says before his appointment he was told the SED was financing the project, that there were ample funds available, and that further appointments would be made to the unit. But the claims about the unit's funding and future were "at worst, bogus, and at best, inaccurate." He has already lost two full-time staff, and is now seeking legal advice on the status of his contract, he says.

The acting principal's report to the governors says that although the unit is an important and welcome development, it has exacerbated the college's financial crisis.

The college could save around £10,000 in this financial year by sack the director of open learning, he says. A partial remedy would be for the principal to take over as director, but he is "not necessarily left with the skills or the time to take on such a task".

Mr Turner adds that the whole thrust of the college over the past three years has been towards setting up the open learning unit, and a move to close it could only lead to a serious undermining of the support given by the SED.

Courses

YOUR FIRST STEP TO A Part time Graduate Research Diploma in Humanities

The Middlesex Polytechnic Graduate Research Diploma in Humanities offers expert supervision for small research projects, based at the Humanities Graduate Centre, Tottenham, north London.

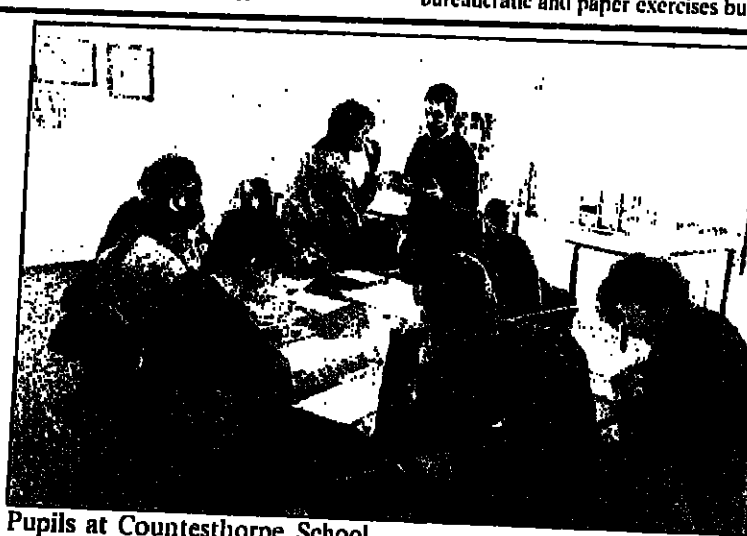
You spend eighteen months on a 18,000-25,000 word thesis, meeting your supervisor regularly. Working for the Research Diploma enables you to evaluate your research abilities and to decide whether to pursue your research to MPhil or PhD level.

Supervision can be provided in: English and American Literature; Traditional and Modern Philosophy; Literary Theory; Drama; Social, Industrial and Political History; Women's Studies; Religious Studies; History of Art and Design; Sociological Studies; European Literature; European Institutions; History of Ideas; American Studies; Psychoanalysis; History and Philosophy of Science, etc.

A good honours degree or equivalent qualification in the Humanities area is expected.

Further information: Admissions Enquiries (tel 0850D), Middlesex Polytechnic, 114 Chase Side, London N14 6PN, 01-895 0595 (24 hours).

Middlesex Polytechnic



Pupils at Countesthorpe School

Schools on trial

Sir, - At first sight Arthur Pollard's review of *Schools on Trial: the trials of democratic comprehensive* (THESE, June 7) was bizarre and spiteful. On second reading it is opaque and evasive. Pollard persistently avoids the debate which the book seeks to open: what is a democratic school and what examples do we have of it to date?

The book tells the stories of four schools so that the reader can see both what they were seeking to do and how they were put on trial. We explain in the first chapter the process by which we came to the belief that here were four democratic comprehensives. But Pollard chooses to complain that "we have to wait until the last chapter to find out what is a democratic comprehensive".

We write that democratic principles at Rislington, Summerhill Academy, Countesthorpe and Sutton Centre produce different features. Each had a distinctive dialogue with its time. Yet Pollard lists such features as if they were a shopping list of silly, cheap items. Again he makes a point by ducking a principle. We say that these schools' trials were ad hoc

inventions which escalated until their were removed and they concealed the really significant moves behind the scenes. So we argue for due legal process. Pollard sidesteps the arguments for legality and thinks that such inquiries would be cumbersome, costly and unnecessary.

We show that these schools were put on trials for petty crimes when their wider aims were the real challenges. Pollard repeats the trigger events as problems which had the "result of public disquiet". Pollard just refuses to review the book's two themes. First the stories illuminate the dark recesses of "politics with a small p". Second, here were democratic comprehensives seeking to innovate by tackling issues of the day, teaching through mutual learning and governing through open debate. As Pollard does not agree that society has to be a critical democracy he does not report on the potential contribution of schools or the practical possibilities in schools.

Yours faithfully,
COLIN FLETCHER,
Department of social policy,
Cranfield Institute of Technology.

Stirling degree

Sir, - The article on the front page of THESE of June 7 gives a misleading impression about the proposals of Stirling University's planning and resources committee. It is not proposed that "Honours options in... economics should be axed." What is recommended is the dropping of the joint honours degree in business law and economics. This particular joint degree, which is one of 21 joint honours degrees involving economics offered by the university has never been popular and currently has no students.

Far from contracting, economics at Stirling is expanding. Next year we will have more single honours students, more joint honours students, more postgraduate students, new joint degrees, a new MBA (with other departments) and our staff will increase from 11 this year to 15 next year (on page 32 of the same issue of THESE you carry an advertisement for our new chair in applied economics). The University Grants Committee is proposing to judge departments by their research record. Ours is particularly strong. For example, we have a major project for HM Treasury on the effects of direct taxation on the incentive to work and 18 books have been written by members of the department since the 1981 cuts.

We are not only well but thriving. Yours,
C. V. BROWN,
Professor of economics,
University of Stirling.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

Professional Association of Teachers

99 Friar Gate, Derby DE1 1EZ
Tel: DERBY (0332) 372367

PAT provides professional and legal services for teachers in colleges of all kinds. It is a fully certificated trade union.

PAT does not belong to the TUC. It is a condition of membership that applicants undertake never to participate in strikes.

We work for a high level of professional commitment, among teachers and lecturers; for the promotion of their interests by the force of argument rather than the argument of force; for the establishment of a genuinely professional image for the teaching profession.

Membership increased by over 85% in 1984. We continue to grow in all parts of the United Kingdom in 1985. We believe that the future of the profession lies in the direction we are taking.

If you wish to consider joining us, write for more information to the following address (no stamp required):

Professional Association of Teachers, FREEPOST, Department H, 99 Friar Gate, DERBY, DE1 1EZ

كتاب من الأصول

DON'S DIARY

MONDAY

Bus to work despite damp weather. The bus stops at the end of University Road, leaving me a 15-minute walk to the education department. Collect computer print-out from university main site en route and begin day by working out why my programme has failed. Fortunately it's only a typing error. Tramp quarter of a mile back to main site to try again. Spend rest of day writing up tables of questionnaire data, rummaging in library for a job to read in preparation for a job interview on Friday and checking and re-checking that I'm prepared for visit to London to give evidence to Select Committee on Education tomorrow.

TUESDAY

Up early. Daren's late today, so take the car to work. Five minute walk from office to station. Meet both the department's professors on the platform and, because I'm in exalted company, travel first class. Take the tube across London in the wake of the two professors and follow them into Westminster. It seems to be very easy to get past several policemen simply by saying what we've come for, but eventually we reach a barrier at which our bags are searched and we have to walk through a security machine.

We arrive early at the committee room and slip in at the back to listen to the evidence given by representatives of the National Association of Governors and Managers. They talk about the difficulty of getting funds for voluntary associations and the cost of attending the Select Committee, at which point we realize the committee apparently does not pay expenses.

When it's our turn we are warmly welcomed by Sir William Straubenzee. The first questions are on the subject of class size and pupil performance which we had mentioned in passing in our written submission. Members of the committee seem unaware of substantial research evidence to the effect that pupils in larger classes perform better on standardized tests than do pupils in smaller classes. We try to explain the partial nature of the evidence but I don't think they were convinced.

Further questions on teacher training, maintenance of school buildings, use of computers and audio visual aids in schools. Chairman brings the session to close promptly after three-quarters of an hour and we leave, feeling that the committee were really more interested in our prejudices (or their own?) than in research evidence.

Have a sandwich on the train back and listen to professional advice on how to conduct myself at the interview on Friday. Take the opportunity of having the car to visit Salisbury's, and return to the office to mark work boldly arrived from diploma students.

WEDNESDAY

More computing today. We hope eventually to have a line installed between the education department and the university's mainframe computer, but in the meantime school of education staff get plenty of exercise walking to and from the main site. Go shopping at lunchtime. There's only my husband and myself to feed but I am always surprised at the amount of food I regularly buy. In spite of living in Leicester for six years I still marvel at the variety and value for money which the market offers. Dept. with correspondence.

and make some telephone calls in the afternoon. Spend the evening doing washing and making preparations for friends coming to dinner on Thursday.

THURSDAY

Feel increasingly worried about tomorrow's interview. I have no real reason to worry as I have already been awarded an Economic and Social Research Council grant which will keep me in work for two years after my present contract ends in September. But the past for which I am to be interviewed is a "proper" job, namely, a lectureship in a university education department which carries the possibility of tenure. Such posts are few and far between and I feel very lucky even to get an interview.

Spend some time doing preparatory reading for tomorrow. Discuss with a colleague arrangements for looking after a Norwegian visitor who's coming to the department the week after next. My husband rings to say letter has arrived inviting me to another interview for a "proper" job next month. Feel dazed. Return home at 5.30 to wash hair and prepare dinner. Have an enjoyable evening which takes my mind off tomorrow.

FRIDAY

Best bib and tucker for the second time this week. Don't feel too bad. Considering... After several hours on trains (travelling second class this time) arrive 15 minutes early for 2.45 interview and sit in secretary's office wondering whether I should fill in my expenses form. Feel a bit disgruntled about this interview as no opportunities are provided for candidates to look round the department or meet established staff. After a few minutes I am ushered in and the interview begins. Superficially it is fairly informal as I and the four interviewers sit in easy chairs in a circle. Everything is friendly (I have met one of them before and another is an acquaintance of my husband), though they don't seem to be as impressed as I feel they ought to be by my ESRC grant which, if I got the job, I would almost certainly be able to take with me to their department. Only half an hour later I am surprised to find the interview is over. They will let me know the result next week, and I am shown out.

It is raining. As I walk back to the station I reflect on all the preparation and anticipation I have gone through in the past week and feel sure that they cannot really want to employ someone they have seen for only half an hour. They must have been pretty fed up by the time they got to me, and had almost certainly found the person they wanted among the earlier candidates.

SATURDAY

Shopping with my husband. After a quick lunch we spend the afternoon at the county cricket ground. Cover is out not long after we arrive which, along with the cold wind, somewhat dampens my enthusiasm. Try not to think about yesterday, but after tea my head of department arrives and I give him a censored account. Leave at close of play and prepare dinner while husband ministers to tomato plants in greenhouse. Drown my sorrows in a bottle of wine.

SUNDAY

Morning is warm and sunny. Don bikini and lie on sun bed reading latest Anthony Price. Feel guilty about neglected thesis. After lunch we set off for cricket but after half an hour the rain drives us home again. Finish Anthony Price and read Sunday papers. Decide to relegate thesis and homework to tomorrow which is a bank holiday. Weather forecast suggests there will be no play at Grace Road. After dinner write Don's Diary, watch *Bleak House* and wonder whether I can stay awake long enough to listen to *Inside Parliament*. Don't really expect our select Committee will feature. It doesn't.

Helen Patrick

The author is a research associate at the University of Leicester school of education.

Embryo guidelines set out

by Jon Turney
Science Correspondent

The voluntary licensing authority set up to oversee *in vitro* fertilization research has proposed a new term - the "pre-embryo" - to clarify the debate about work on the early stages of human development.

The authority, set up by the Medical Research Council and the Royal College of Obstetricians and Gynaecologists, published guidelines for research last week just before the final demise of Mr Enoch Powell's Private Member's Bill to outlaw all work.

The guidelines suggest that the group of cells growing from a fertilized human egg be called the pre-embryo until the first signs of individual development appear. The term has no prior currency among biologists, and does not appear in Dame Mary Warnock's report on human fertilization and embryology, published last year.

However, the definition is consistent with the Warnock report's argument for a 14-day limit on research on

human embryos. Dr Anne McLaren, director of the MRC Mammalian Development Unit in London and a member of both the Warnock Committee and the licensing authority, said the problem was that scientists used the word "embryo" to mean different things in different contexts. But she found many people assumed an embryo had arms and legs.

The licensing authority discussed various alternative terms for the early stage of development, when it is not clear which of the growing mass of cells will become part of the embryo proper. Lay members argued that pre-embryo was the best term to use but its introduction at this stage of the debate is bound to prove controversial with groups opposed to the research.

The authority, chaired by Dame Mary Donaldson, is intended to set guidelines for experiments until legislation is passed. The guidelines published last week forbid attempts to alter the genes of pre-embryos, to grow embryos in the uterus of another

species, or to clone embryos by swapping cell nuclei. And applications for approval will have to explain why non-human species.

The MRC hopes the guidelines will form a model for eventual government legislation, but supporters of the Powell Bill are to press Mr Norman Fowler, Secretary of State for Health and Social Security, to incorporate the prohibitions they seek in any future statute.

The MRC is also organizing a long-term follow-up study of children born through *in vitro* fertilization, and clinics seeking registration from the licensing authority will have to keep a register of all births.

Clinics and research laboratories will also be subject to scrutiny from local ethical committees, and researchers will have to obtain signed consent of donors for use of human sperm and eggs in research, even if the sperm comes from a sperm bank where donors are normally anonymous.

ILEA sues Sir Keith over pool contribution

by Karen Gold

The Inner London Education Authority is suing Sir Keith Joseph, Secretary of State for Education and Science, over the authority's annual contribution to the advanced further education pool.

The ILEA wants its contribution to the pool of local education authority money reduced by a third, saving the rate-capped authority £20 million in the forthcoming year.

The authority is arguing that the formula used to calculate contributions to the pool is unfair to the ILEA and that Sir Keith should change it. It first asked him to do so in October 1983 and has since been twice refused. The ILEA is asking the High Court to rule that the Secretary of State should make new regulations to change the formula.

The present formula is not linked to the amount of money any authority receives from the pool to fund its advanced further education. It is calculated on two factors: the number of school pupils an authority has, and how much its business community pays in rates (its non-domestic rateable value).

On that formula the ILEA pays almost 10 per cent of the pool: this year around £80 million. It argues that because London rateable values are

higher than the rest of the country's this is unfair and completely out of line with the number of ILEA school-leavers going on to higher education. £40 million would be fairer, it says.

The ILEA argues that the Oakes committee on higher education called for the system of pool contributions to be changed several years ago, and that the current system means London is subsidizing other local education authorities. It has persuaded the Association of Metropolitan Authorities to agree to a compromise formula for contributions which would lessen its share, but the Association of County Councils has not agreed to this.

The DES has argued to the ILEA in letters and in court that pooling is a service carried out by the Government on behalf of local education authorities.

Although the present formula has been criticized, there is no consensus that another would be fairer, according to the Department of Education and Science. In any case it does not accept that the present system is unfair to the ILEA and has produced calculations suggesting that its contributions could be increased.

The case was heard in the High Court before Lords Justice Canfield and Mann. A judgment is expected before the summer recess.



The Russians may not be coming to the Oxford Union but they have been at Essex University for the last fortnight discussing the environmental consequences of nuclear war. A two-volume report is to be produced by the Scientific Committee on Problems of the Environment. Pictured (from left) are Gail Gallesich, of the Washington Center on the Consequences of Nuclear War, Sir Frederick Warner, chairman of the SCOPE steering committee, and Alex Postnov, of the Soviet Academy of Sciences.

EEC move to break down degree barriers

EEC ministers will debate a package of proposals aimed at breaking down the insularity of European higher education establishments when the Council of Ministers meets in December.

Key proposals are that students should do some of their degree study in foreign European country, and that to facilitate this, member states should agree to a mutual recognition of each other's qualifications, and to a credit transfer system.

A Commission document COMETT, which stands for Community Programme in Education and

Training for Technology - will be circulated among the member states for the forthcoming debate. The put on the circular, after taking into account the views put forward by education ministers who met in Luxembourg last week.

Much of the emphasis in the document to be debated, will be on encouraging students to acquire linguistic ability in a wide range of disciplines so that academic and professional skills can be exchanged among the member

states. Ministers are expected to consider increasing the twinning arrangements between European universities and colleges. They may also approve plans to recognize academic study carried out during an exchange visit to a foreign university, in the title of a degree.

Other proposals to be debated, which have support throughout the EEC, include one to prepare higher education institutions for the demands of new technology, through greater links between academia and industry.

Book prices quadruple over decade

by Adriana Caudrey

Academic books have quadrupled in price over the last 10 years, according to independent research carried out by CLAIM - the Centre for Library and Information Management - at Loughborough University.

Its report shows that the average price of an academic book shot up from £4.59 in 1974, to £19.16 by the end of last year, which represents a 417 per cent rate of inflation in book prices over the decade.

All books - academic and non-academic - have gone up from an average £3.66 to £14.50 per book, over the same period - a 396 per cent inflation. This is set against a 262 per cent general level of inflation at the end of last year.

CLAIM asserts that its research is now particularly important because academic libraries have been badly hit by cuts, and librarians should possess factual ammunition from an independent source when putting their case for increased funds.

They also point out that they have been hampered in their research by the large proportion of unpriced books - 44 per cent in the first half of last year. The problem first came to light in 1981 and led CLAIM to carry out a survey of unpriced books alone. This showed that ignoring those books had resulted in the average price being underestimated by 1 per cent.

Books in some disciplines actually cost five times as much last year as they had done 10 years ago and twice as much as five years ago. For example, books on medicine, engineering, agriculture, domestic economy, printing and building went up from an average £5.17 in 1974 to £25.23 by the end of last year.

Social science, politics, economics and law books have risen in price from an average £4.21 10 years ago, to £16.46 last year. Literature books just over tripled in price.

Training compromise close

by David Jobbins

Local authorities and the Manpower Services Commission are close to a compromise over funding for work-related non-advanced further education in the wake of the future over the White Paper, *Training for Jobs*.

A formula has been reached after months of doubt over how the sector would be planned and funded. This allows colleges to retain almost total control over their curriculum rather than permitting the MSC to buy into specific courses.

The crux of the deal is a college/local education authority programme of up to three years setting out the range of courses and activities to be offered. This will include the controversial 25 per cent of funding from the MSC, but

will be within the control of the college and local authority after consultations.

It therefore ducks the main thrust of the White Paper which gave the MSC virtually total control over the provision of work-related non-advanced further education. This diplomatic retreat in the face of local authority outrage and opposition of the teacher unions is believed to have angered Mr Peter Morrison, minister of state for employment.

But the MSC has retained some control after the local authorities conceded to a joint review procedure of the programme offered by each college in November and December, three months into the academic year and eight months into the financial year.

The draft plan suggests that adjustments will be possible as a result of the review if the provision is found to be

markedly different from the programme.

The outcome, a far cry from the MSC grab for work-related non-advanced further education which dogged the early discussions, will be viewed as the best possible outcome by many local authority leaders. It avoids the possibility of rows over recruitment unless specified courses were provided.

Not only are there suggestions of ministerial objections to the package, but there are signs that some local education authorities may resent even this limited concession of power to the MSC.

The main crunch will come at the Association of Metropolitan Authorities education committee next Tuesday, where the harder line authorities are represented.

Second YTS year 'not guaranteed'

by Patricia Santinelli

Sixteen-year-olds who joined the Youth Training Scheme between this April and next March could be debarred from spending a second year on it.

This is revealed this week in an additional note to a document outlining a possible framework for a two-year YTS due to start in April 1986.

The note by Mr Peter Rimmer, secretary to the youth training developments section of the Manpower Services Commission, says that 16-year olds joining after that date will be eligible for two years. But the fate of this other group still has to be considered.

"It should be noted that there can be no guarantee of a second year of training for any 16-year-olds entering YTS in 1985/86. Where such provision is possible, priority might need to be given to those remaining unemployed after completing their first 12 months of training," the note says.

New information on the scheme was also given this week by Mr Geoffrey Holland, director of the MSC, when he addressed a Confederation of British

Industry conference in Bristol.

Denying that the two-year scheme would be a method of unemployment relief or a form of cheap labour, Mr Holland said that there should be only one mode of administration and delivery.

"We have had enough of Mode A and Mode B, that is what some erroneously think of as first and second class citizens. We need one mode with one purpose and one basic grant for each person on the scheme," he said.

But he cast some doubt at the possibility of setting a minimum period of off-the-job training. This had been outlined in the document as being likely to be set at the minimum of 10 to 13 weeks - undoubtedly not an improvement on the present minimum of 13 weeks.

He added that employers would need to have their hearts and heads examined if they did not choose to participate in the scheme which above all was not about "do-gooding" but represented sound business sense.

Mr Holland denied that however large the Exchequer contribution, the

Memorial fund raises £130,000

A fund set up in memory of the late Lord Robbins, for 30 years a professor at the London School of Economics, and an economist, public servant, and supporter of the arts, has raised £130,000, which will go towards research scholarships and lectures.

An annual series of lectures, will be given at the LSE by top international economists. The postgraduate research scholarships, in economics, the arts, or higher education policy, will be awarded from October.

New systems

City University is to run a new programme of fellowships in engineering systems management with the Engineering Industry Training Board. Fifteen fellowships will be awarded each year to qualified engineers already working in industry.

Black governors

All governing bodies of Inner London Education Authority colleges will have a co-opted place set aside for a black governor from this September. An ILEA survey found 2 per cent of its college governors were of Asian origin and 2.5 per cent of Afro-Caribbean origin - much lower than the proportion of students from these backgrounds.

Vocational first

The Business and Technician Education Council has agreed to call its new vocational award the BTEC First Certificate and Diploma. Courses will be introduced in September next year and will be available full and part-time, or linked to the Youth Training Scheme for those aged 17 and over.



Mr Holland: defended scheme

cost of the scheme would still be too much.

Mr Holland defended the decision to admit only approved training organizations to the scheme. They would be checked against criteria of organizational and training capability and to financial stability.

Colin Welland is standing in front of one of Britain's major gas pipelines. Gas provides getting on for sixty per cent of all the heat used in British homes - and the way all that energy is transported about the countryside is one of the reasons why Colin is keen on gas. Because gas is delivered direct to Britain's homes and factories through a network of over 150,000 miles of hidden, underground

pipes - no lorries, trains or tankers needed, and no pylons to spoil the view. But the fact that it goes underground isn't the only beauty of gas. It's also the cleanest of fuels to burn. Which helps to keep the air purer. So it's not just gas customers who benefit. Britain benefits because people prefer gas.

"BRITAIN'S FAVOURITE FUEL" KEEPS THE COUNTRYSIDE BEAUTIFUL



PEOPLE PREFER GAS - AND BRITAIN BENEFITS

BRITISH GAS

مركز الأصل

The UGC's fantasy game, by Sir Alwyn

by Olga Wujtas
Scottish Correspondent

There is a "breathtaking air of unreality" about compiling the latest submissions to the University Grants Committee, according to the principal of Glasgow University.

Sir Alwyn Williams told the university's general council that the UGC would receive more than 5,000 pages of indigestible facts on departmental research alone.

The universities had been asked four times since 1976 how they would respond to phased cuts of differing severity but it was difficult to discern any positive contribution made by these exercises to the intellectual health of the nation, he said. They had borne little relationship to subsequent measures on funding and student intake.

It was generally overlooked that the distribution of home students for the whole decade was based on "an abstrusely conceived seven-week exercise" undertaken six years ago to assess the effects of phasing out the UGC's

Mr Giles Radice, Labour's education spokesman, has demanded the resignation of Sir Keith Joseph as Secretary of State for Education and Science, as anxiety about the future shape of higher education provision continues in the aftermath of the Green Paper.

The Prime Minister appeared content to leave Sir Keith in post for as long as he wished, regardless of the damage he did, said Mr Radice, adding: "The

contribution towards the full cost of training overseas students, Sir Alwyn added.

Retrospectively, a wholly wrong impression had been created about the Government's 11 per cent cut of recurrent grants between 1981 and 1984.

"A view is already emerging that the Government imposed the cuts in order to bring about a well-conceived academic redevelopment in higher education," said Sir Alwyn. "Nothing could be further from the truth." The clear objective, to axe the universities' public funding.

All academic developments which

the Government initiated, such as "new blood" posts and the expansion of information technology, were urgently recommended in reports which were attempting to staunch the worst effects of the cuts on education and industry.

"The only contribution the government economies made to the advancement of knowledge was to stand Decartes on his head with the transposition: *sum, ergo cogito*," said Sir Alwyn.

Given the continual mismatches between university forecasts and Government provision, he was apprehensive about planning for the late 1980s. No matter what the universities said or

truth is that he has long since outlived his usefulness. Indeed over the last six months, his reputation has suffered a series of severe setbacks.

Sir Keith's "humiliating climbdown" over student grants and universal condemnation of the Green Paper were among the five reverses he listed.

"The best service Sir Keith can now render education is to resign," said Mr Radice in a weekend speech in Peterborough.

set out to do following this latest exercise, Sir Alwyn feared they would end up frantically adjusting their academic commitments to suddenly imposed, unforeseeable constraints.

The recent Jarrett report on the efficient management of universities was irrelevant, he claimed. The shortcomings attributed to the universities were not endemic to them, but arose mainly from the Government's inability to recognize that the country's economic decline could not be reversed without a well-founded educational system with some confidence on its own future.

Productivity at Glasgow, measured as a proportion of students to staff, had increased by a third since 1981, while the unit cost of its administration was two thirds of the national average, he added.

Sir Alwyn said he would have greater confidence in the Jarrett report had the committee included American academics as assessors and compared the management of British universities with the practices adopted in Japanese industry.

"In all probability, such changes in the remit and perceptions of the Jarrett committee would have resulted in a clear acknowledgement of the world status of British universities and a much more forthright indictment of the deleterious effects of current government policies."

Nalco resists cuts plan

by David Jobbins

White collar workers want to challenge academics for the most senior jobs in Britain's universities and colleges.

A move to tighten up the policy document drawn up by the National and Local Government Officers Association has won the support of the union's executive and was expected to be endorsed by its annual conference in Blackpool yesterday.

Nalco's radical policy for further and higher education presents a direct challenge to most of the assumptions underlying the Government's Green Paper on higher education into the 1990s.

An emergency motion drafted by the universities national committee was due to be put to conference by the executive, and will become union policy even if time does not permit a debate.

It condemns the "abandonment" by the Government of the Robbins principle and the adoption of a "value for money" approach under which courses are available provided the benefits are sufficient to justify the cost in public funds. The motion pledged resistance to Government "cuts" by all the means at Nalco's disposal.

The retiring president, Mr Bill Gill, told the universities group meeting that the Green Paper confirmed Nalco's worst fears on closures and mergers, and that "Robbins is to be abandoned in favour of the principle that there should be an adequate return on investment."

The policy document recommendations bear out Nalco's deep-seated resentment that academic and social prejudice continues to favour the universities at the expense of polytechnics and colleges.

Indeed, the national executive working party which drew up the proposals actively considered the case for the abolition of the universities or at least their transfer into further education colleges on the grounds that their existence is a "stumbling block to a planned, comprehensive, accessible, status free, fairly resourced and democratically controlled system." But the working party decided against this course.

Instead the report recommends an end to separate planning, coordination and funding mechanisms for the universities and proposes a new national body to supersede the University Grants Committee and the National Advisory Body, supplemented by broadly-based regional bodies.

While the policy document's general proposals are not expected to provoke deep controversy, the recommendations on senior posts will almost certainly lead to friction with other trade unions and professional organizations, most notably the Association of University Teachers.

The document was expected to be amended to read: "The management structure of further and higher education institutions should be changed so that top level posts are no longer the exclusive preserve of academics."

Nalco's leaders believe that an academic career is not necessarily the best grounding for a vice chancellor, polytechnic director or their senior aides.

Delegates to the Nalco universities group endorsed their negotiators' rejection of a 4 per cent pay offer, and warned the branches to consider what form of industrial action would be appropriate if the university employers refused to make a "realistic" offer in response to the claim for a £14-a-week rise.

Theatre book's author 'copied thesis'

A lecturer at University College, Cardiff claims that large passages of her postgraduate thesis have been copied and reproduced in the work of another lecturer without her permission or acknowledgment.

Dr Hilary Ball, a lecturer in the education department, says parts of her Master of Education thesis of 1972 on Theatre in Education have turned up in a book by Dr Christine Redington, a lecturer at Kent University, entitled *Can Theatre Teach?*, published in 1983.

Dr Ball says some passages of her thesis are reproduced with virtually identical wording in Dr Redington's book. She complained to the book's publishers, Pergamon Press, who immediately withdrew the book pending an investigation.

But Pergamon put the book back on the market following advice from London solicitors Reynolds Porter Chamberlain. They wrote to Dr Ball telling her there had been no copyright infringement, which required "substantial reproduction" of the original work.

Dr Redington also denies lifting any parts of Dr Ball's work. "Of course I read it, and must have absorbed it as it is an excellent piece of work. But there is no question of copying any of it. The matter has been, quite rightly, investigated and the book has been cleared," she said.

But Dr Ball remains adamant that certain sections of her thesis have been lifted directly. "I just sat down and started reading her book out of interest one day, and I immediately recognized parts of it, even though I had written my thesis more than 10 years ago," she said.

Dr Redington wrote in her book: "Tom Clarke's aim in starting his Children's Playtime at the Argyle Theatre, Birkenhead, in 1944 was to combat the influence of the cinema and encourage a love for the theatre. He wanted to introduce children to the living theatre by an entertainment which was first and foremost good fun."

Other examples include: DR BALL - "Ultimately, under the revised Elementary Education Code of 1924, the Board of Education recognized the attendance of children at dramatic performances during school hours and paid a grant upon approved expenditure for the purpose."

But even if the cuts went ahead, he felt they could be phased more slowly. He believed the success of the Agricultural Genetics Company linked to the research council in raising capital suggested there was scope for increasing research funding from other sources, but existing support was being withdrawn too quickly. "I hope the Government will consider rephrasing these cuts to prevent unnecessary damage to programmes for which industrial funding is a possibility, but will take time to arrange," he said.

The AFRC has also set up a study to assess the scope for private funding of the Soil Survey of England and Wales, whose future is threatened by separate Government cutbacks.

The survey is run from the AFRC-administered Rothamsted Experimental Station and receives £1.7 million a year from the Ministry of Agriculture. It will receive half that sum next year, with state support disappearing altogether the year after. The council has commissioned a firm of outside consultants to study the survey's future organization and to see if outside customers will pay for soil maps.

The council has also set up a study to assess the scope for private funding of the Soil Survey of England and Wales, whose future is threatened by separate Government cutbacks.

The survey is run from the AFRC-administered Rothamsted Experimental Station and receives £1.7 million a year from the Ministry of Agriculture. It will receive half that sum next year, with state support disappearing altogether the year after. The council has commissioned a firm of outside consultants to study the survey's future organization and to see if outside customers will pay for soil maps.

The number of female entrants to part-time courses rose by 74 per cent from 1978 to 1982, and by a further 36 per cent in 1983. Last session, there were 450 female undergraduate entrants compared to 260 male entrants. The total number of part-time female students in 1983/84 was almost double the number of men: 1,010 compared to 540.

The bulletin shows that 69 per cent of postgraduate students in Scottish universities are male, with postgraduates in Scotland amounting to just under 11 per cent of the national total. Undergraduates at Scottish universities represent 16 per cent of the national total, 44 per cent of whom are women.

A lecturer at University College, Cardiff claims that large passages of her postgraduate thesis have been copied and reproduced in the work of another lecturer without her permission or acknowledgment.

Dr Hilary Ball, a lecturer in the education department, says parts of her Master of Education thesis of 1972 on Theatre in Education have turned up in a book by Dr Christine Redington, a lecturer at Kent University, entitled *Can Theatre Teach?*, published in 1983.

Dr Ball says some passages of her thesis are reproduced with virtually identical wording in Dr Redington's book. She complained to the book's publishers, Pergamon Press, who immediately withdrew the book pending an investigation.

But Pergamon put the book back on the market following advice from London solicitors Reynolds Porter Chamberlain. They wrote to Dr Ball telling her there had been no copyright infringement, which required "substantial reproduction" of the original work.

Dr Redington also denies lifting any parts of Dr Ball's work. "Of course I read it, and must have absorbed it as it is an excellent piece of work. But there is no question of copying any of it. The matter has been, quite rightly, investigated and the book has been cleared," she said.

But Dr Ball remains adamant that certain sections of her thesis have been lifted directly. "I just sat down and started reading her book out of interest one day, and I immediately recognized parts of it, even though I had written my thesis more than 10 years ago," she said.

Dr Redington wrote in her book: "Tom Clarke's aim in starting his Children's Playtime at the Argyle Theatre, Birkenhead, in 1944 was to combat the influence of the cinema and encourage a love for the theatre. He wanted to introduce children to the living theatre by an entertainment which was first and foremost good fun."

Other examples include: DR BALL - "Ultimately, under the revised Elementary Education Code of 1924, the Board of Education recognized the attendance of children at dramatic performances during school hours and paid a grant upon approved expenditure for the purpose."

But even if the cuts went ahead, he felt they could be phased more slowly. He believed the success of the Agricultural Genetics Company linked to the research council in raising capital suggested there was scope for increasing research funding from other sources, but existing support was being withdrawn too quickly. "I hope the Government will consider rephrasing these cuts to prevent unnecessary damage to programmes for which industrial funding is a possibility, but will take time to arrange," he said.

The AFRC has also set up a study to assess the scope for private funding of the Soil Survey of England and Wales, whose future is threatened by separate Government cutbacks.

The survey is run from the AFRC-administered Rothamsted Experimental Station and receives £1.7 million a year from the Ministry of Agriculture. It will receive half that sum next year, with state support disappearing altogether the year after. The council has commissioned a firm of outside consultants to study the survey's future organization and to see if outside customers will pay for soil maps.

The council has also set up a study to assess the scope for private funding of the Soil Survey of England and Wales, whose future is threatened by separate Government cutbacks.

The survey is run from the AFRC-administered Rothamsted Experimental Station and receives £1.7 million a year from the Ministry of Agriculture. It will receive half that sum next year, with state support disappearing altogether the year after. The council has commissioned a firm of outside consultants to study the survey's future organization and to see if outside customers will pay for soil maps.

The number of female entrants to part-time courses rose by 74 per cent from 1978 to 1982, and by a further 36 per cent in 1983. Last session, there were 450 female undergraduate entrants compared to 260 male entrants. The total number of part-time female students in 1983/84 was almost double the number of men: 1,010 compared to 540.

The bulletin shows that 69 per cent of postgraduate students in Scottish universities are male, with postgraduates in Scotland amounting to just under 11 per cent of the national total. Undergraduates at Scottish universities represent 16 per cent of the national total, 44 per cent of whom are women.

The solicitors representing Pergamon agreed in their letter that it was "perhaps unfortunate" that Dr Redington did not acknowledge in her bibliography that she had read Dr Ball's thesis, but that was "probably because she found little there which she had not already found in the original sources."

Dr Redington also admits she should have acknowledged Dr Ball's thesis, although she says she mentioned it in the bibliography at the end of her thesis and in a footnote in her book.

Mr Christopher Price, of Reynolds Porter Chamberlain, said in his letter to Dr Ball: "The fact that, as a result of your independent researches, you both chose some of the same passages of earlier works for quotation or paraphrase was coincidental and is hardly surprising in view of the relatively limited original material available."

"The end result is that the similarities between your thesis and Dr Redington's book are not marked and are no greater than one would expect of two works which trace the history of a small, specialist movement."

Dr Ball has now abandoned her case, although not because she has been convinced by any of the arguments. "I cannot afford to take on a firm of London solicitors, but I know that something wrong has happened."

"I realize there is no copyright on ideas, but many of the pieces of work I have quoted and used, and my whole line of argument has been reproduced almost exactly - and without an acknowledgement," she said.

What CATE did...

With backbench Tory MPs increasingly restive about the unresolved teachers' strike, Sir Keith Joseph has been rather short of good news to report to his cronies. But the first reports from his teacher education watchdog CATE provided a small boost to his campaign for better standards by refusing accreditation to existing teacher training courses.

Sir Keith felt so vindicated by CATE's findings that he reported them direct to Mrs Thatcher, in the Cabinet's good news ritual known as "Telling Mother". "Mother" is said to have smiled.

Victorian valours?

A very public inconvenience for John Pearson, chairman of Wakefield's education committee, visiting the Association of Colleges in Further and Higher Education Isle of Wight conference. The cultural highspot was a guided tour of Osborne House.

Mr Pearson, seeking some relief, discovered that the stately home's facilities consisted only of Queen Victoria's own charming but firmly locked commode, and was forced to leave the party and sprint across the grounds to a discreetly positioned toilet.

From "Heartsearch" columns of the New Statesman. "Underemployed lecturer, divorced, early fifties, fed up, seeks warm, affectionate female, for re-energizing purposes and resurrecting the will to live. Age unimportant, lively personality vital. Is it wise for any lecturer to confess to being underemployed? Presumably Sir Keith does not read the New Statesman."

Amazing Raison

Mr Timothy Raison, the minister for overseas development, seemed anything but displeased by the suggestion at a press briefing that his ministry's new scholarship scheme for Commonwealth students should bear his name. Accepting that an ODASS scholar did not have quite the same ring as a Rhodes or Fulbright scholar, he declared himself open to suggestions. A Raison scholar, perhaps? "That's for you to decide," replied an only slightly embarrassed minister.

Coombe Lodge, the local authority funded further education staff college, is planning to expand by buying the prestigious Mendip Hotel with panoramic views, space for 40 guests, and a price tag of well over £500,000. This does not please the DES-based Further Education Unit, whose staff are appealing against a £1.5 million cut.

Naughty and nice

Sympathy for industry still has a little way to go at the top. Sir Peter Swanton, director, explaining the qualities of university decision-making to foreign delegates at a British Council seminar last week: "If you were as bright as academics have to be, but were also obnoxious, you would go into business and make a great deal of money. It is nice, which keeps you in academic life."

Cash is still not too tight at Southampton University, which is digging deep to find £25,000 to support the World Archaeological Congress's first meeting in Britain - at Southampton - next year.



Having introduced an equal opportunities policy for its staff, the British Council has increased the number of women on its board to four. Pictured in the boardroom are (from left to right) Professor Lalage Brown, head of the department of adult and continuing education at Glasgow University, Diana Warwick, general secretary of the Association of University Teachers, Lady Anglesey and Elizabeth Thomas, former secretary general of the Authors' Licensing and Copyright Society.

Biotech effort under review

The Science and Engineering Research Council's biotechnology directorate is under review after its first four years of operation. The directorate, which spends just over £3 million a year, is the council's main effort and a special SERC panel, chaired by Dr Charles Rees of ICI, will consider its future direction.

Biotechnology is widely recognized as a priority for research in Britain, but it is one of the areas where the Advisory Board for the Research Councils is concerned about coordination between different funding agencies. Four research councils - the SERC, the MRC, the DfEE, and the DTI - are involved.

Why we still need the lessons of the past

by Peter Aspdon

The Historical Association has added its voice to the growing clamour of protest against the Government's treatment of the humanities in its Green Paper.

In a letter to the Secretary of State for Education, Sir Keith Joseph, the association stressed the value of studying history for employment prospects, and said there was serious concern among schools and universities over the subject's future prospects.

"The skills in verbal and literary

Students 'being elbowed out of the benefits system'

Students and young people are discriminated against in the Government's review of the social security system, according to the National Union of Students and Youthaid.

In a joint report to MPs, the NUS and the charity for unemployed youth accuse the Government of trying to elbow students out of the welfare system. Mr Phil Woolas, the NUS president, launched the report, saying: "To stop students getting benefit without increasing the grant to a proper level will simply stop young people from going into higher education."

The report warns that if students are cast out of the social security system and also have their grants whittled down, they will be forced to live with choice of college and course and deprive them of independence.

The report points out that the review, by Mr Norman Fowler, Secretary of State for Social Services, does not provide detailed proposals on benefit provision for students, because these must await the findings of a consultative paper on student support, currently being prepared by the Department of Education and Science.

The authors suspect that the Government will not seriously consider students' needs and entitlements because the DES paper will not be submitted until the end of June. Responses to the Green Paper must be in by mid-September, which leaves little time for the students' case to be taken into account.

According to the report, the Government's review shows "dissatisfaction at the ability of students to claim benefit at the same time as receiving grants". But the NUS and Youthaid point out that with very few exceptions students can only claim supplementary benefit during vacations.

They say: "We believe that students should be adequately supported through the grants system... However, until such a situation is established, we believe that the status quo should be maintained."

The report attacks the Government's proposal that supplementary benefit should be replaced by a new system, including a standard personal allowance, which would vary according to age and marital status. The writers deplore the fact that married claimants under 25 years would receive a lower rate of benefit than their counterparts aged over 25. They say this means that the new benefit system, as it affects the young, will not be based on need but on a "wholly arbitrary discrimination by age".

They say the plans will result in: ● under 25-year-olds being treated as juveniles; ● increased poverty among young benefit claimants living away from their families; ● more hardship for families already on low incomes; ● big cuts in benefit for 16 and 17-year-olds, which would force more of them into Youth Training Schemes.

Students will be able to follow a computing course at their own pace and level of ability.

exposition and analysis which arise from a study of the real world of the past are already recognized and in demand in the graduate jobs market place. Some 40 per cent of history graduates who find employment within six months of graduation find it in commerce and industry," said the letter.

Many members of the association feel that parents of schoolchildren are put off by the image of history, preferring more apparently vocational subjects such as economics and geography. "A pessimistic view of the situation is that, on present tendencies, the separate study of history could almost disappear from our state schools within the next 10 years," said the letter to Sir Keith.

The letter follows an 'emergency' meeting of history academics from schools, polytechnics and universities at the House of Lords, chaired by the provost of Queen's College, Oxford, Lord Blake.

They have now asked to meet Sir Keith to further discuss the Government's attitude towards history and the rest of the humanities, in view of its emphasis on science, engineering and technology.

Putting on the Ritz: Bristol Polytechnic's fashion degree show, which summer evening wear from final year student Cathy O'Brien.

Continuing pressure within the National Advisory Body for "concentration" of advanced further education in larger institutions may be back-door elimination of local authority involvement, a leading Labour local councillor has warned.

Mr John Pearson, chairman of Wakefield education committee, attacked the Green Paper for its "renewed emphasis on the new brutalism of scholastic life" as conceived by Sir Keith Joseph, Secretary of State for Education and Science.

Addressing the summer meeting of the Association of Colleges for Further and Higher Education, Mr Pearson said he drew limited comfort from the decision to establish the NAB on a permanent basis, but remained concerned over "concentration".

"It is difficult not to wonder whether this is merely a more circuitous route towards the elimination of the local education authority role in advanced further education. If this is so, it concerns me not because I have some perverse wish to extend or maintain

the power of the local authority for its own sake but because I believe that one of the most important issues for higher education in Britain in the last quarter of the 20th century is the improvement of access," he said.

The most effective way of achieving improved access was to minimize the division between advanced and non-advanced further education by continuing the arrangements under which students could move from one to the other easily and comfortably.

Students will be able to follow a computing course at their own pace and level of ability.

Students will be able to follow a computing course at their own pace and level of ability.



Putting on the Ritz: Bristol Polytechnic's fashion degree show, which summer evening wear from final year student Cathy O'Brien.

Labour councillor attacks 'new brutalism'

Continuing pressure within the National Advisory Body for "concentration" of advanced further education in larger institutions may be back-door elimination of local authority involvement, a leading Labour local councillor has warned.

Mr John Pearson, chairman of Wakefield education committee, attacked the Green Paper for its "renewed emphasis on the new brutalism of scholastic life" as conceived by Sir Keith Joseph, Secretary of State for Education and Science.

Addressing the summer meeting of the Association of Colleges for Further and Higher Education, Mr Pearson said he drew limited comfort from the decision to establish the NAB on a permanent basis, but remained concerned over "concentration".

"It is difficult not to wonder whether this is merely a more circuitous route towards the elimination of the local education authority role in advanced further education. If this is so, it concerns me not because I have some perverse wish to extend or maintain

the power of the local authority for its own sake but because I believe that one of the most important issues for higher education in Britain in the last quarter of the 20th century is the improvement of access," he said.

The most effective way of achieving improved access was to minimize the division between advanced and non-advanced further education by continuing the arrangements under which students could move from one to the other easily and comfortably.

Students will be able to follow a computing course at their own pace and level of ability.

Students will be able to follow a computing course at their own pace and level of ability.



Do the job properly – or not at all

If, as Jenn Bockock suggests (Union View, May 24) an appropriate response to the Green Paper is to echo Alice's cry of "Groucher and Groucher", then recent developments in teacher education are certainly reminiscent of the Mad Hatter's tea party.

In particular the National Advisory Body's antics have surely destroyed what little credibility it has left as a "planning body" for local authority higher education. We've witnessed over the last two years or so how the NAB goes about managing the implementation of cuts, but it's only in the last few weeks that we've seen just how much of a batshit it can make of developing/administering an expansion.

Faced with an instruction to increase primary education provision the NAB sets about closing three colleges and two polytechnic departments, all of which are heavily involved in primary teacher training. Courses which the NAB itself admits are recognized to be of higher standards and quality. Colleges which all fit the sort of educational criteria we might legitimately expect a planning authority to set – such as servicing (without duplication) a whole geographical area, or progressive and extensive in-service and continuing training provision, or again having developed strong links and involvement with local communities and industries.

The only criteria the NAB has yet advanced for the proposed closures is the arbitrary designation that the departments concerned are too small to be viable.

However, it's not just the colleges openly threatened with closure which would suffer. The knock-on effect on the rest of the public sector is often overlooked.

A number of colleges are being asked to accommodate a significant rise in primary teacher training numbers without the concurrent rise in their total "target" numbers or, of course, funding. In one case this expansion amounts to some 50 per cent over two years, and these increases are boosted by reason of the reallocations for the proposed closures.

In other words, colleges will be forced to make cuts in their non-teacher training courses to balance out the numbers and the financing. For some this will mean the cutting or closing of arts and humanities courses which they were encouraged to take on only a few years ago.

But the madness pervades – not just the content but also the method of the proposals. Colleges were given a ridiculously short time to respond, particularly as most of this was over the Easter vacation period. The process has been so shabby in fact that the NAB teacher education group did not attempt to hide its dissatisfaction to the extent that one member is reported to be considering resigning on principle over the issue.

More significantly, at the time of writing, the proposals still have to negotiate two stages of the NAB decision-making procedure – the board and the committee. So there is still a chance for good sense to prevail for the NAB to redeem itself. And while that process is taking place the message must go out loud and clear to the NAB, not just from the threatened colleges, nor just from the teacher education sector, but from the public sector as a whole – either do your job properly or not at all.

Andy Whyte

The author is a national executive member of the National Union of Students.



A far-sighted approach to the East African famine has resulted in £33,000 of appeal funds going to Nottingham University to fund a three-year lectureship in agriculture.

Mr Oliver Walston, a Cambridgeshire farmer whose "Send a tonne to Africa" scheme has raised more than £2 million, made the offer to the university's Department of Agriculture and Horticulture.

The lecturer will be principally concerned with an MSc course in agronomy, threatened by a freeze on staff recruitment. Pictured is Professor Derek Irwin (left) with a Sudanese student, Sulman Abdel Rahim Elanadef, on this year's course.

PhD rates still too slow, says SERC

by Jon Turney
Science Correspondent

Universities are responding sluggishly to the Science and Engineering Research Council's demand for better PhD submission rates. Latest figures show overall four-year completion rates for over 2,000 SERC-supported PhD candidates only rose from 49.1 per cent to 51 per cent between 1983 and 1984.

Although rates for individual institutions vary widely from year to year because the numbers registered are often very low, many universities and colleges show a completion rate below 40 per cent. Among those with over 20 students who began in 1980, they include Bradford (32 per cent), Queen Mary College, London (35 per cent), University College, London (39 per cent), Salford University (30 per cent) and University College, Aberystwyth (38 per cent).

These institutions will be concerned because the council wrote to vice chancellors last summer complaining that submission rates were too low, and calling for "a substantial increase in the near future". The SERC now puts submission rates for individual

departments before grants committees when they make quota awards for postgraduate studentships. "With the strong suggestion that they shall take direct action in the case of any department whose completion rate record they consider unsatisfactory."

Among the major postgraduate centres, Oxford has the best record from the two most recent sets of SERC figures, recording 68 per cent in 1984, up from 61 per cent the previous year. Cambridge has dropped from 66 per cent in 1983 to 58 per cent in the new list, while Edinburgh has moved ahead from 43 per cent to 71 per cent. Imperial College, London shows a small improvement from 52 per cent to 53 per cent.

The Scottish universities together average better than the United Kingdom figure of 51 per cent, with 57 per cent of their 213 PhD students completing in the four years to 1984. The differences between different boards and committees of the SERC are similar to those recorded in 1983, with the nuclear physics board scoring significantly higher than others at 68 per cent, and the joint committee of the SERC and the Economic and Social Research Council only recording 46 per cent completion.

We are not brainwashers, say academics

by Adriana Caudrey

Leading academics have mounted a vigorous defence of their own and colleagues' departments in the wake of a controversial report which alleges that "blatant indoctrination" is rife in universities, polytechnics and schools.

A handful of academics whose courses come under specific attack in the booklet *Education and Indoctrination* are now considering publishing their own documents to correct what they call "misleading references".

Senior academics at Bradford University's school of peace studies are among those who believe their department was maligned and are now considering writing a reply.

Other leading academics have mounted a staunch defence both of their own and colleagues' departments in the wake of allegations in the report that students are being brainwashed.

The document was written by Dr Roger Scruton, reader in philosophy at Birkbeck College, and editor of the right-wing *Saturday Review*; Dr Dennis O'Keefe, senior lecturer in the sociology of education at the Polytechnic of North London; and Miss Angela Ellis-Jones, a political researcher and member of the National

Council of Women and Families for Defence. It states: "Indoctrination at the higher level is both easy to achieve and potentially extremely damaging."

The report cites the London University Institute of Education and the Polytechnic of North London as "notorious offenders" in this field. It claims that the former sets "tendentious examinations", and suggests that such practices are partly responsible for the existence of indoctrination in schools.

Now Professor Ted Wragg, director of the school of education at Exeter University and an external examiner, said: "It is a gross calumny to suggest that the Institute of Education is a hotbed of radical ideas. Left-wing academics are firmly balanced by right-wing academics, and by political middle-of-the-road academics."

Professor Wragg was firmly opposed to the report's proposal that departments alleged to be indoctrinating their students should be cut off from state funding. "Some people might say that you should close down theology departments if their emphasis is on Christianity... one's definition of indoctrination is so subjective, that the proposal would be almost impossible to implement."

The report insinuated that Bradford University's school of peace studies had put itself out on a limb because of its course material, and was therefore reliant on funds from the Rowntree Trust. Senior academics in the department say this is the third time that Dr Scruton has made their course the target of his attacks.

Dr Paul Rogers, chairman of the undergraduate school of peace studies, said: "There is a clear implication in the report that the school regards itself as indoctrinating and therefore seeks funding from non-Government sources. This is completely inaccurate."

He said the school received three quarters of its funding through the University Grants Committee, and only 25 per cent from a variety of sources, including the Rowntree Trust.

Dr Alistair Ross, senior lecturer in primary education in the same department at the PNL as Dr O'Keefe, said: "I don't think indoctrination is as simple as it is portrayed in the report. It criticizes papers on Marxist economics, they should also criticize papers which don't contain Marxist economics. Indoctrination cannot be

confined to left-wing politics. Much unconscious indoctrination is conveyed in courses which maintain the status quo."

Dr Ross attacked the report's proposal that "politically contentious subjects" should be banned from schools. He said: "You cannot proscribe controversial issues. Children are aware of contentious subjects from a very young age. Even primary school children are sensitive to political, social and environmental issues."

Dr Margherita Rendel, a specialist in political science and law, defended the Institute of Education course, Rights in Education which she founded and which is specifically attacked in the subject have frequently been drawn almost exclusively from neo-Marxist discussion. It says that the papers used "loaded questions" to steer students towards answers which were "forgone conclusions".

Dr Rendel said: "Many of our students are mature students, so that to suggest that they can be indoctrinated is outrageous. The aims of the course are to convey serious information in an unbiased way."

Bernard Crick, page 16

YTS boycott bid fails

Scottish further education lecturers made a second attempt last weekend to boycott the Youth Training Scheme after being defeated at their own national conference.

But the motion to withdraw from the YTS, and to seek the withdrawal of other trade unions, was defeated at the annual general meeting of the Educational Institute of Scotland by 200 votes to 154. A similar motion failed at last month's conference of the EIS Further Education Lecturers' national section.

Mr Vince Mills of Coatbridge College, said YTS had led to eight deaths, 240 major and 2,000 minor injuries. He rejected claims that a boycott would lead to a "Cowboys' Charter" since the union would have no input into Minipower Services Commission schemes.

It was impossible to withdraw from individual schemes since the MSC was organized on an area basis, said Mr Mills. "We don't want to close down colleges or undermine lecturers' jobs, but it's such a bad scheme, we should stand up and be counted, and refuse to administer the damn thing," he said.

However, Mr George Hamilton, vice chairman of the FEELS, said for 20 to 40 per cent of their work. Mr Jim Thomson, a secondary school teacher in Central Region, added that 88 per cent of YTS contracts in Scotland were with FE colleges.

Lecturers' inservice training 'incoherent'

by Patricia Santinelli

The North West Regional Training Scheme for lecturers in further and higher education has been criticized by Her Majesty's Inspectorate for its lack of coherence.

The Inspectorate says of the two-year part-time inservice certificate in education (further education), observed between June 1983 and July

HMI urges adult expansion

Steps to expand adult basic education provision in Leicestershire should be taken as soon as resources allow, according to a report by Her Majesty's Inspectorate.

Potential demand is already considerably greater than current provision, with existing student numbers stretching the present service to its limits, says the report. In order to maintain current levels of provision staff work many hours in excess of their paid commitment.

HMI investigated the service in Leicestershire during the spring and summer of last year. It studied the varying provision offered in the dense urban areas of Leicester, surrounding market towns, and the rural districts.

The report urges a greater emphasis on numeracy, and says the need for such provision has already been identified. "The inspectors found the quality of numeracy provision reflected

1984, that one of the desirable characteristics of an effective and efficient scheme is a coherent well planned two year curriculum.

"The present course, however, gives the impression of being two distinct parts with some unnecessary repetition in content."

Immediate action should be taken to ensure better connections and coherence between the work of the first and

the strengths of the literacy scheme and the weaknesses arising from lack of a clear policy, inadequate funding and lack of suitable training.

Though much of the work was based on personal experience and difficulties, there was an over-emphasis on manipulation of symbols and the rote learning of procedures.

The report says they were convinced, from discussions with large numbers of students from a wide range of backgrounds, that a substantial number of adults were benefitting from the service.

Adult Basic Education and some aspects of provision of English as a second language in Leicestershire, published by the DES Publications Despatch Centre, Hylton Park, Stanniford, Middlesbrough.

US student aid programme defended

from William Norris

WASHINGTON

They are not quite out of the wood yet, but there is quiet satisfaction in American higher education circles that President Reagan's plan to slash \$1.7 billion from the student loan programme is now a dead letter.

The House of Representatives' version of the 1986 budget, which emerged after two days of debate, during which three Republican attempts to slash education spending were heavily defeated, not only restores the \$8 billion for student aid but allows it to rise with inflation through 1987.

Higher education programmes aimed at low-income students also received an inflation boost, while other higher education spending was frozen at 1985 levels for 1986 but allowed to increase at the rate of one half of inflation for the next two years.

All in all, the prospect is immeasurably better than it was a few months ago when the Reagan budget was introduced. There will still be some hard bargaining in committee between

the House and Senate proposals, but the gap is not that wide.

The Senate earlier approved a plan which would cut spending on student loans, but only by \$300 million. So unless the president refuses to sign the eventual compromise, which is unlikely, it looks as though the universities can breathe again for another year.

The House of Representatives vote on the budget is being seen as yet another blow to the prestige of Education Secretary William Bennett, who has been vociferous in his support of the president's plan to slash the student loan programme.

Mr Bennett, who has just celebrated his first 100 days in office, is "celebrated" in the right word – told his staff ruefully last week: "Life is hard, but public life can be harder. It was my intention to have a dull debate, but I expect there will be more controversy as we proceed. I do not seek controversy, but there is no reason to hide our beliefs under a bushel. We should be public and proud and confident about our views."

Having said that, Mr Bennett promptly appeared on television to

announce his belief that the public was behind him and the issue of cutting student aid would not be allowed to die.

"Some people feel that too many affluent students are getting aid from the government," he said. "If you look at the polls that have been taken of the American people, they think that this is one of the areas we should look at closely."

The Education Department estimates that college aid goes to about 13,000 students whose families earn more than \$100,000 annually, though others claim that the figure is less than half of that.

"Everyone who's knowledgeable about the facts knows that we've got programme problems here, and that we've got a limited amount of money," Mr Bennett said. "Whether the issue is settled or not for this year, it will come up again."

It has not been a happy week for the unfortunate Mr Bennett. Long considered a pillar of the "new right", he now finds himself under fire from both sides of the political spectrum. Conservatives are especially angry

at his action in forcing the resignation of two senior advisers, Edwin Gardner and Lawrence Uzell, because of their contention that federal aid to the handicapped should be eliminated.

David Sanders, field director for the conservative caucus, has accused Mr Bennett of "lack of intestinal fortitude". He said bitterly last week: "Conservatives have a new axiom around town. Once we start getting our people in positions of authority, they're not our people any more." Mr Gardner himself claims that Bennett caved in to a "McCarthyite smear campaign".

Meanwhile a left-wing group, People for the American Way, is accusing the Secretary of staffing the education department with "far right-wing ideologues opposed to the concept of public education". "Under Bennett the far right has a new friend at the top," they add.

Before his appointment, Mr Bennett made no secret of his view that he believed that the Education Department should be abolished. He may be beginning to wish that someone had listened.

Chinese universities to help achieve modernization

by Geoffrey Parkins

China's Communist Party has announced that the entire education system is to be geared to achieving the country's economic goals and its modernization.

The party's central committee recently decided to remove tenure for higher education teachers and abandon state funding for and gear scientific and technological research to industry and increased production.

Among the most sweeping changes are:

- the introduction of a scholarship system linking grants to academic performance, while most students will have to pay fees and meet their own expenses;
- greater autonomy for universities and colleges in how they spend their funds, in making appointments, in the choice, design and teaching of courses;
- freedom to select their own research and engage in commercially profitable projects, on an institutional, departmental or individual basis.

Other changes include greater freedom for students to choose courses in compliance with a graduate assignment scheme under the guidance of the state, employers and institutions, and a massive increase in the training of school teachers.

The committee appears to have opted for a dual system of student support. While introducing a scholarship system linking level of grant to academic performance, it has at the same time in effect ruled that free higher education and state support should no longer be available to most students. But it will continue to provide grants for teacher training, those assigned to tough projects after graduation and those in financial difficulties.

The extra funds released by the move can then be channelled into key high-priority educational projects.

The new system appears to allow a considerable degree of flexibility, as it is closely tied to the new graduate assignment scheme whereby students choose or are selected for courses involving work-study arrangements or which are tailored to specific work or research.

The best or most suitable students

will be sponsored either by the state, employers or institutions, while other students will have to pay their own way. Sponsored students agree a service period of between five and eight years after graduation. Students who break their contracts must repay all fees and grants to their sponsors.

The new system of sponsorship, fees and grants has already been introduced into a number of higher education institutions, including many in Shanghai. There, work-study programmes and student part-time work were encouraged and proliferated as many students suddenly found themselves having to pay fees and meet living expenses.

University authorities concerned maintain that living conditions, although always poor, have not deteriorated and students with financial troubles do receive financial assistance. On the basis of this experience the central committee feels that the national adoption of the new scheme will be a success.

The greater autonomy permitted to universities and colleges in the spending of funds, appointments, courses, teaching and research goes hand in hand with the party central committee's policy of commercializing further and higher education (and indeed, many of the middle and technical schools).

The committee is convinced that state control is stifling and that commercialization will facilitate the integration of research and study with production, liberate productive potential and provide the "incentive of material reward" for the successful.

But while greater autonomy is to be permitted, the state has reserved the responsibility of "guiding and appraising" institutions. Educational projects will be assessed on the basis of their "profitability", and the committee's reform statement made it quite clear that successful institutions will be encouraged with material rewards, while those that do not produce the goods will be consolidated or closed down.

Clearly, another new measure to allow university staff a say in the appointments and dismissals of senior officials including vice-presidents, will

China's cyclists: pedalling towards changes in the education system

relate closely to the entrepreneurial abilities of those officials. If staff don't ask for the dismissal of inept managers, the Communist central committee will.

The new reform will also allow greater freedom to teachers at all levels in devising courses, curriculum design, choice of materials and method. Teachers will be encouraged to adapt their content and methods to individual student needs. The to-be-expanded teacher training courses will reflect and promote this attitude.

Before any western educationalists become heartened by this, the committee's statement laid emphasis on the fact that one of the main objectives of the reform was to "do away" with outmoded ideas and teaching methods, including China's "outmoded educational philosophy and teaching methods" which value intellectual or academic pursuits such as "book learning" and engendering a "respect for authority".

Teaching is to be geared to the acquisition of practical skills for employment. And the central committee

announced: "To err is permitted while carrying out the reform, but to balk at it is impermissible."

The reforms also call on all regional authorities in the country to do everything in their power to raise the status and pay of teachers at every level. The social and economic status is to be raised to a level that is the envy of all other workers. They will be held in high esteem, not because of their superior knowledge or intellectual abilities, but because of their massive contribution to the economic development and modernization of the nation.

The scale and pace of the changes involved is worrying, even to some within China's Communist Party itself. One of China's senior social scientists has expressed his deep concern that in a fast-developing technological society where educational emphasis is placed more and more on science and technology and the achievement of material ends, there is a risk that young people will develop a "narrow outlook" which is ignorant of broader social issues and concerns and the social implications of their own work.

Financial freedom demanded

from Geoff Maslen

MELBOURNE Australia's higher education system is in a critical state of disrepair and will remain destitute unless private investment is introduced, according to Dr Donald Watts, the head of the West Australian Institute of Technology.

Addressing a national conference last week, Dr Watts delivered one of the strongest arguments for allowing free market forces to determine the future health and direction of higher education heard in Australia for a long time.

In a scathing attack on commonwealth interference in the autonomy of higher education institutions, Dr Watts said a revitalization of tertiary education required increased institutional freedom.

Colleges and universities should be free to set tuition fees, offer scholarships and provide student loans to complement the grants they received at present from the commonwealth.

All institutions should be allowed to admit full fee-paying students beyond the enrolment levels set by the government. It was the institution's responsibility to "face the music of graduate oversupply" or to find ways of subsidizing the public student at the expense of those who could pay.

"What wisdom allows a government or a bureaucrat to deny the right of any Australian to pay for his or her education in Australia?" Dr Watts said. "What sense is there in restricting anyone from entering an institution on a full fee-paying basis, whether the student is Malay, Chinese, Aboriginal, or white Australian, provided the person meets entry standards which indicate an acceptable probability of success?"

Dr Watts said he was appalled to see increasing numbers of Australians paying to have their sons and daughters educated in America, after they had failed to gain entry to the course of their choice in Australia.

In a series of radical recommendations, Dr Watts called for:

- the elimination of commonwealth controls over institutions which, along with those imposed by the states, had produced a "bureaucratic monster";
- the scrapping of the "meaningless and unsupportable" distinction between universities and colleges, allowing the market place to establish the range of activity for all institutions;
- the commonwealth to hand over to the states the money required to meet the running costs of higher education institutions and the states to reinstate institutional autonomy so that fees, scholarships and loans could be introduced;
- all students over a given age to be given the same living allowance, the amount paid being added to the taxable income of the parent. A similar system could be used to add to parental incomes an amount equal to the unemployment benefit by youth up to a given age.

Businesses back publicity week

A number of businesses and other groups are backing Canada's National Universities Week, to be held in October.

A Montreal-based advertising agency has donated artwork and a logo for the week, while one of Canada's largest bookstore chains will print and distribute National Universities Week book marks at its 85 stores.

In addition to promoting universities, the Association of Universities and Colleges of Canada is expected to take the chance to hammer home its views about university under-funding.

The theme of the week is "extending ideas", and virtually all degree-granting universities and colleges are coming up with a number of schemes to publicize the importance of universities. In conjunction with the week, university presidents plan to travel across Canada, speaking to local groups, business people and politicians on a number of issues relating to higher education.

Caught red-handed in an attempt to alter the facts

A post card from Elena Bonner, the wife of the Russian academic Andrei Sakharov, to their relatives in the United States was tampered with en route, according to expert graphologist Charles Gersin.

The card, received by the relatives on May 25 had apparently been dated April 21 and contained only "domestic" news – spring cleaning, the weather, etc.

Since, however, the family had previously received news that Sakharov had begun a protest fast on April 16, and had been "killed" to

hospital on April 21, they became suspicious.

Furthermore, the card asked if birthday presents sent to the family had been received, although another postcard, dated April 3, acknowledged a communication from Elena Bonner's mother, Ruth, which indicated that the gifts had arrived.

The April 3 card also said that the snow had nearly all melted, but the suspect card, ostensibly written nearly three weeks later, has the gutters running with melted snow.

According to Gersin, who does not know Russian, the postcard was altered by someone other than the original writer. The changes he noted represent in two cases a clumsy attempt to change the tenses of Russian verbs.

The aim of the alterations, the relatives believe, can only have been to convince them that all was well with Sakharov, on April 21, and that he had not begun his protest fast.

According to Gersin, the tampering was done by a person who was not a member of the Sakharov family.

Prophet of the good life

The passage from innocence to maturity marks the life of Professor David Riesman, not just as it does for any man but as one of the leading sociologists of his generation (and not only his) and as an American experiencing the turbulent 20th century power of his nation.

For Riesman has a long reach - back across half a century of sociology from its age of innocence before and after the second world war to its present age of disillusion or at least intellectual retrenchment, and back across even more years of the history of the United States, almost exactly those years that marked the transition of Jefferson's and Lincoln's republic into a world power.

When he was born in Philadelphia in 1909 the 19th century was not properly over in America. The civil war was almost as near as the second world war. His father, the director of the city hospital, had to tread carefully between the corrupt Tammy Hall-style political machines and the progressive "muckrappers" who challenged their power. For his mother, an early Bryn Mawr graduate, Europe was the centre of the world; America was backstage. The flow of American writers and intellectuals eastwards across the Atlantic was still a familiar phenomenon; the reverse flow of Europeans seeking cultural asylum in the United States lay in the unimaginable future. The departure of Henry James was as near as the arrival of W. H. Auden.

These were Riesman's beginnings - in an almost 19th century world of corrupt political machines, of *fin de siècle* aestheticism, of America as Europe's outpost, of a grandmother who kept a horse and carriage until coachmen could no longer be found in the late 1920s. He was born into a rich and cultured German Jewish family, established in the United States before the easy incorporation of such families into America's WASP elite had been seriously compromised by the influx of the "Russians", the poor Jews of eastern Europe, and before their cultural confidence had been undermined by the anti-German hysteria of the first world war.

Yet this child of innocent early 20th century America became successively a New England lawyer; one of America's leading post-war sociologists and, through his authorship of *The Lonely Crowd*, the surprised prophet of the affluent life style of Eisenhower's America and even of the first stirring of youth culture; the ethnographer of higher education, that most distinctive and for a while in the 1960s most dynamic of transatlantic industries; and a member of the university great-and-good called to serve on the Carnegie and other national commissions; and a committed opponent of the Vietnam war, that first faltering of imperial America.

So Riesman's personal and intellectual biographies offer a fascinating descent through the excavated layers both of 20th century America and of sociology, which for all its naiveties and arrogance has had a decisive influence over the shape of academic life and more broadly of public culture. Riesman may live in a traditional New England house, owned by the philosopher Alfred North Whitehead in his last Harvard days, in a quiet Cambridge street; his white clapboard may seem a compelling symbol of his rootedness in an American tradition. But he keeps thoroughly up-to-date teaching, and lodging, Harvard students and making field trips to track down that unsearched higher education species, the college president and even his/her spouse, or writing about the future of women's colleges in an age of feminist awareness.

Riesman is now well into his seventies, which is important not because it qualifies or excuses his recent work (neither is necessary) but because of the generation in which it places him. The decades fall away as it places him. Bitter 1960s, the affluence and cold-war politics of the 1950s, the progressive solidarity of the 1940s, the progressive New Deal of the 1930s, the Scott Fitzgerald hedonism of the 1920s. Riesman's childhood and upbringing were in an even earlier decade, at a time when the confidence of the 19th

PRIVILE

century was only beginning to turn, when Victorian values of probity and progress had only just begun to be eroded by a weary Spenglerian pessimism but had not yet been challenged by the stark counter-evidence of world war and holocaust.

The young Riesman grew up in a privileged, but unsettling, world. He had a German governess as a child and later was sent to private schools, including the William Penn Charter School, a 17th century foundation which he remembers as "decayed classical." His family was a firm part of Philadelphia society. Among the visitors to his home were John Dewey and the Elmhursts who founded Dartington.

But he had to overcome a strong sense of inferiority in relation to his parents, both formidable people although in very different ways. His father was highly successful doctor, a professor at the University of Pennsylvania as well as hospital director, appointed to national commissions by President Hoover and with an international reputation that extended to Soviet Russia, as Riesman was to discover when recovering from a twisted knee in a Moscow hospital in 1931.

His mother, he later recalled, was "an aesthete who had the misfortune to regard herself as uncreative." She read the novels of D. H. Lawrence and Virginia Woolf in their first editions. She worshipped art but held a deeply dismissive view of the practical world, that was part aristocratic disdain and part cultural pessimism. Both parents however were secular rationalists who made nothing of their Jewishness. They were also committed to a high moral seriousness; the Riesmans' wine cellar was locked up for the duration of Pele.

He grew up therefore in the shadow of his father's achievement and his mother's cynicism. His inheritance was confused - maybe a slow sense of guilt about his privileged upbringing that showed itself first in adolescent isolation and later in a curiosity about Russia - and depression-hit Detroit where briefly in the summer of 1934 Riesman put himself George Orwell-style in the bleak position of the jobless, perhaps an oppressive experience of professional success derived from his father's dominant example; a reaction against his mother's weary high culture that showed itself in a fascination with sport, especially baseball, and detective stories.

Riesman went not to Princeton, so fashionable in the 1920s, but to Harvard. Both he and his parents, although probably for different reasons, preferred the more solid charms of America's oldest university. "Princeton seemed too near, too atheistic, too thespian, too socially self-assured, too anti-intellectual, and too clubby," he recalls.

At college Riesman does not seem to have been clubbable. Outwardly his Harvard career was a success; he did well enough as an undergraduate to stay on at the law school and he covered education for the Harvard *Crimson*. But inwardly things seem to have been different. Still today he talks of his Harvard days in the late 1920s in a self-effacing even apologetic way.

"I was not popular," he liked history best but I was too slow a reader and could not plough through the archival material; even his account of staying on at the Harvard law school is prefaced by the self-deprecatory "I talked singularly devoid of ambition."

Talking more than half a century later Riesman still conveys a strong sense of his awkwardness and aimlessness as a student.

Yet it is in his last year at Harvard that he formed a crucial personal and intellectual relationship. He met a young German political scientist, Carl Friedrich, who had moved from Heidelberg in the 1920s. This friendship gave him new confidence because he recognized in Friedrich someone who was "just more, cosmopolitan and more genuinely intellectual than my parents."

Allyste Friedrich exercised some ghost of suffocating parental authority. He certainly introduced Riesman to the social sciences, and he also became a close friend. Together they bought a Vermont farm and spent many weekends during the 1930s clearing the brushwood from the surrounding land. Riesman also helped Friedrich with his book *Constitutional Government and Democracy*, which offered an oblique apprenticeship in political science and introduction to the social sciences.

But despite the influence of Friedrich, Riesman's passage from the law to sociology occupied more than a decade. He went first to Buffalo to help found the law school there and even spent a year in the New York district attorney's office. Buffalo he and his young wife found exciting, a western city compared with Philadelphia and Boston, and an industrial city yet small enough to be encompassable.

Law he found less exciting. He never lost the impression of lawyers as "crisp, bright but non-intellectual" he had formed at Harvard. In fact he had rejected Friedrich's proposal to do a PhD in political science because he felt it was too like law, abstract and dehydrated. At Buffalo he began to meet other more intellectual social scientists.

Already his intellectual interests were moving away from the mainstream preoccupations of law. While many lawyers, under the impact of the New Deal, had begun to show an interest in labour and administrative law, Riesman wrote instead about the tension between democracy and de-famation. Already he had become fascinated by the power of language, in an almost anthropological sense. Indeed he still admits: "If I had known where I was going I would have liked to be an anthropologist." He went to New York, got himself psychoanalytically, met the Trillings.

Riesman spent the war in industry working for the Sperry Gyroscope company. In 1946 came an extraordinary piece of luck; he was invited by Edward Shils to teach social science courses in the (undergraduate) college of the University of Chicago, then more than now the powerhouse of American sociology. He recalls: "Sociology had a very low threshold of entry but a very high ceiling. I would never have been accepted into anthropology."

If it took more than 10 years for Riesman to make the switch from law to sociology, his rapid ascent from novice in his new discipline to superstar with the publication of *The Lonely Crowd* in 1950 took less than five. He earned sociology on-the-job, sitting in on survey method courses given by Shils' colleague and rival and Riesman's mentor and later friend, Everett Hughes. And he learnt fast, at a time when sociology was just coming together to form the independent empirical science with which we are familiar.

By means of such serendipity Riesman joined that small group that so decisively moulded modern sociology in America in the years just after the end of the war. But he was never, and as never become, a mainstream sociologist. The illicit attraction of anthropology continued. Even his conventional survey work betrayed the lure of anthropology, and anticipated later sociological preoccupations with culture as well as class, by his choice of subject, the role of the church in the American community. *The Lonely Crowd* seemed to many a work of intuitive ethnography rather than eventually retreated from the wrangling of Chicago sociology, back east to Harvard.

Riesman's reputation rests on, but is also the victim of, the spectacular success of *The Lonely Crowd*, and of its more academically conventional follow-up *Plagues in the Crowd*. The book was not an instant success. It received a harsh review in the *Herald Tribune* and no review at all in the *New York Times*. Not surprisingly for a book that Riesman and his co-



authors Nathan Glazer and Reuel Denney had conceived as a speculative essay on the American character, its initial academic reception was ambiguous. Daniel Bell and Talcott Parsons were among early critics, even Friedrich found it a book of great subtlety that might give rise to misleading simplification.

But these doubts were soon swept away. Lionel Trilling praised *The Lonely Crowd* in a Book Club essay. Anchor books, America's pioneering paperback publishers in the Penguin mould, brought it out as one of their first two titles along with Edmund Wilson's *To the Finland Station*. Its description of a fundamental shift in the American character, from an "inner-directed" type governed by internalized parental authority to an "other-directed" type less repressed, more social, more playful was greeted with a shock of popular recognition. It seemed to explain so much, the decline of traditional authority, the erosion of inherited morality, the culture of post-war affluence.

The Lonely Crowd was a book of great contrasts. At one level it was, as Riesman himself says, "a book of innocence"; 1950 was probably the last date at which it could have been written because later it would have been overwhelmed by the accumulation of sociological research. But at another level it was a book of great complexity.

It had grand ambitions; one was to redo de Tocqueville, to illuminate the quality of the American character in a postwar age of affluence and optimism with the same clarity displayed by de Tocqueville in the early years of the republic. It was intellectually electric; psychoanalysis, anthropology, surveys were all important ingredients in the book's mix. Maybe it was even obliquely autobiographical; Riesman had certainly been brought up in an "inner-directed" culture but he had witnessed, and perhaps participated in, a shift towards an "other-directed" culture.

Certainly he has always resisted the equation made by many between "inner-direction" and autonomy and between "other-direction" and conformity. Riesman sees the contrast in quite different terms. In a later preface to *The Lonely Crowd* he wrote: "He (the other-directed person) lives in a glass house, not behind lace or velvet curtains"; and later: "The problem for people in America today is other people. The social and psychological

landscape has become enlarged because those other people are more in number and, possibly, in heterogeneity than ever before. But other figures in the landscape - nature itself, the cosmos, the Deity - have retreated to the background or disappeared."

Riesman moved back to Harvard in 1957 on the prompting of McGeorge Bundy as professor of social science, a chair he has only recently relinquished. Much of his more recent work has been in the study of higher education. One reason for his choice is his preoccupation with civil liberties and academic freedom goes back to his early work on defamation and was re-awakened by the threat of McCarthyism. Another was simply a sense of being at home - "here was an ethnographic territory where I did not feel alien." But Riesman's interest has always been in the social psychology rather than the political structure of higher education.

Two aspects of his character mark out Riesman from many of his intellectual colleagues. In an American intelligentsia dominated by the over-confidence he persistently displays a tentativeness, even a lack of confidence; and he has a stubbornly counterfactual streak. Both characteristics, lack of confidence and gentle stubbornness, may have roots back into his childhood in early 20th century Philadelphia; both are apparent in the political positions he has taken up - sympathy for rather than allegiance to the New Deal, an instinctive pacifism but an equal determination to see the defeat of Germany and Japan in the war, a Kennedy liberal and Peace Corps enthusiast who has always resisted anti-Soviet hysteria, a Jew who remained sceptical about a Zionist patriotism. Just as his father manoeuvred between machines and the "muckrappers" for the good of his hospital, so Riesman has found it difficult to be a political or intellectual zealot. He has many friends but few disciples; his ideas have influenced many but commanded few.

To characterize David Riesman in the terminology he made famous he seems an honourable example of "other-direction", but in his case the "other" by which he has been governed has been the American 20th century experience. And deep inside maybe there still remain traces of another "inner-directed" person, of a small boy playing in Rittenhouse Square in Philadelphia under the watchful eye of his German governess before the first world war, a world ago.

Jon Turney on biotechnology in America and the move from the laboratory to the field

What happens when a farmer adds a specially tailored bacterium to the usual round of pesticides, fertilizers and hormones used to amoint growing crops? Questions like this are now causing conflicts between ecologists and biotechnologists, and they mark a new phase in the debate about genetic engineering as the technology moves out of the laboratories.

It is now 10 years since the first peak of concern over our new abilities to manipulate living organisms through altering their genes, and many of the early fears about the dangers of experiments in the field proved unfounded. But the fact that experiments can go ahead safely in well protected laboratories does not guarantee a hazard-free transition to industrial production or agricultural application.

The new questions raised along the way have so far drawn most attention in the US, repeating the history of the first debate over gene-splicing - recombinant DNA research - in the mid-1970s. A main focus is on moving out of the lab in the most obvious sense; releasing genetically engineered organisms into the environment.

The most controversial example has been proposals by researchers at the University of California to study the effect of modified bacteria on crops. The so-called "ice-minus" bacteria have been given genes which may help them protect crop plants from frost damage. But court action by environmentalists has so far stopped the experiments going ahead.

A range of positions on problems like this were aired at a session of the American Association for the Advancement of Science annual meeting in Los Angeles last month. The main new element in the debate is strong criticism of university and industry biotechnologists (the two are often the same) on scientific grounds. The criticism comes from ecologists like Professor Stephen J. Risch of the University of California at Berkeley who says many biotechnologists have minimized the risks in their rush to proceed.

"These scientists make naive statements about what happens in nature," he said. Little was known about the ecology of ice-minus bacteria, and Professor Risch wondered: "What happens if it gets into bacteria, how will it affect their frost resistance?"

Risch was also concerned over attempts to insert genes into crop plants to help them resist herbicides or to produce toxins harmful to insects. He pointed out that many weeds are closely related to crop plants, in fact one farmer's crop is often another's



Crop spraying... add genetically engineered organisms and you stir up conflict

A crop of controversies

weed and transfer of herbicide resistance to unwanted plants could be a serious problem.

Professor Risch was not opposed to the agricultural experiments in principle, and even said he believed the ice-minus proposals were probably safe. But he wanted better ecological risk analysis beforehand: "I'm not saying we shouldn't ever release these things, but first let's take a look at what might go wrong."

He was backed up by Frances E. Sharples of the Oak Ridge National Laboratory, who wrote a study of the introduction of species into strange environments for the US environmental protection agency four years ago. She complained that her work had been ignored or dismissed up to now by biotechnologists. She told the AAAS meeting there was general agreement among ecologists that experience with new agricultural species, pest control using organisms which prey on the pest, and episodes like the

introduction of rabbits in Australia which created new pests were all possible models for release of genetically modified organisms. "The ecological processes called into play when an organism is moved from one place to another are the same whether the organism is moved from one continent to another, from one ecosystem to another, or from a laboratory to an open field." In spite of this, the message had not been appreciated by the defenders of experiments with genetically engineered organisms. "Many non-ecologists, even those who are scientists, still fail to see the point the ecologists are making," she said.

This is because the gene-splicers have a narrow outlook, according to another ecologist, Professor Philip Regal of the University of Minnesota. And he saw the trend to specialization deepening at the expense of the broad outlook needed to assess the consequences of new developments in the life sciences. He said universities on light

budgets were diverting funds to popular fields like biotechnology or computing, and cutting traditional programmes like studies of plant and animal ecology, "without considering the long-term social and intellectual costs". He also criticized the barriers to proper information about some experiments thrown up by commercial secrecy. For example, the chemical company Monsanto wanted to splice a toxin-coding gene from one bacterium into another species more commonly found in the soil. Professor Regal alleged that the university ecologists qualified to assess the risks of this proposal couldn't get enough details out of the company to do the job.

The growing commercialisation of the field was also seen as a problem by other AAAS speakers. Ms Terri Goldberg of the Coalition For Responsible Genetics - a pressure group monitoring genetic technology and seeking stronger controls on research and development - complained that some

of the most active members of the US National Institutes of Health recombinant DNA advisory committee have major appointments in biotechnology firms or are vocal promoters of genetic engineering research. "There are a shrinking number of molecular biologists who are not fundamentally tied to commercial firms and who are willing to risk the approval of their colleagues to provide technical assistance to environmental or community groups," she said.

Two congressional aides, Anthony Robbins and Phyllis Freeman, also drew attention to doubts about the reliability of companies when it came to risk assessment. But they also felt there was a growing scientific consensus on the need to reduce uncertainty about predictions about effects of released organisms. The American Society for Microbiology will hold a meeting later this month to discuss how to advance understanding of the ecological implications of biotechnology.

But other speakers at the meeting warned of the dangers of introducing new organisms which would hamper development of biotechnology in America. Dr George B. Rathman, president of the biotechnology company Amgen, called for policies to promote successful applications of biotechnology, "rather than focus exclusively on assessing low probability risks". He said anyone advocating slowing down development of the field, and possibly relinquishing the American lead in biotechnology, would have to answer to all the people whose health and nutrition problems could be solved by the new technology.

And Dr Gregory A. Dancke of Stanford University stressed that the debate over the future of biotechnology is taking place in the midst of a global contest over innovation. If the US does not forge ahead, he implied, other countries with less powerful regulatory lobbies will profit from American hesitancy.

No one has yet proposed releasing engineered bugs into British fields, but the ecological debate is sure to spread to these shores as our own strength in agricultural biotechnology begins to throw up useful products which must be tested. Perhaps by that time the biotechnologists will have heeded Frances Sharples' plea: "The most effective new approach would be for the biotechnology community to cease regarding ecologists as 'fanatics' or as merely the equivalents of philosophical or political activists; and recognize that the discipline has much to offer in making biotechnology the success it ought to be."

All quiet on the tabloid front

For British researchers, the main tasks have been care and, very substantially, reassurance.

Professor Adler and his colleagues have had to deal with many more cases of the "anxious well" than of actual AIDS. Again, press coverage has upped the psychological ante very considerably. "Have You Got AIDS?" prefaced a list of 10 highly non-specific symptoms such as headache, tiredness, sore throat, lassitude, diarrhoea, all of them perfectly characteristic of a British winter, colds, flu, post-viral depression, many of them recognizable symptoms of the kind of anxiety such headlines are likely to produce.

Chicians are understandably more than sceptical about this kind of press attention. It disguises the real nature and epidemiology of the disease in order to make it seem a more general threat than it is and thus, in turn, focus attention ever more sharply on a minority. The result was a rush of scare stories, most of them wildly exaggerated: firemen and ambulancemen refusing to resuscitate gay victims (the question of identification was neatly sidestepped), cleaners refusing to clear up after Gay Soc meetings. How much and how seriously this ever happened is open to doubt, but Professor Adler acknowledges that at least one patient whose "anonymity" had been disguised was dismissed from work after appearing on a television documentary.

This raised the question of notification. AIDS is not a notifiable disease, Professor Adler believes - and the Department of Health takes the same line - that the present informal system of notification is perfectly satisfactory and that anything more formalized might merely heighten the problem.

Would AIDS have been the issue it is today had it been identified in the more permissive and liberal 1960s? Professor Adler feels the question needs to be asked from another angle: would AIDS cause such fears and horrors if it were a disease restricted, like cystic fibrosis, to the children? In the midst of this latest "moral panic", the "folk devils" are those in the gay community, AIDS, or rather the fear of AIDS, is part of a whole constellation of irrational prejudices that reflects current social attitudes.

In her 1977 - and thus pre-AIDS - essay *Illness as Metaphor* American critic Susan Sontag examined our obsession with metaphors of disease: plague, TB, cancer. In the past, epidemics were seen as divine retributions, but also, more secularly as the work of unpopular authorities: anti-semitism fed off medical ignorance more than once. Tuberculosis, or rather a rarefied and inaccurate version of it, became the disease of romanticism. On the metaphorical model, it was supposedly characterized by a heightened sensibility; as it, allegedly painfully, wasted the body it proportionately freed the artistic spirit; no romantic artist or hero or heroine was entirely convincing without a dash of phthisic blood on the lips. For the French, *la gangrene* was a disease of the spirit, caught through the cuts and grazes of modern poli-

tics, and this a more usually thoroughly secular ailment.

Cancer, the great modern plague, differed. It was always presented as violent, invasive, excruciatingly painful (it often isn't), romantic TB usually is, caused not by a refined temperance but by a deeply repressed personality. Not contagious, it is presented as mankind's revenge on itself, part of an obsession with fifth-columnism that afflicts the century.

Herpes, on which the Rev. Jerry Falwell fell with glee, was no more than an uncomfortable smuck on the wrist. AIDS, when it came along, presented Moral Majority with the full Old Testament blast of what Sontag called "inescapable fatality". Not only was it incurable, it also afflicted only the least acceptable of social groups and thus seemed to obey a fine Mosaic logic.

The Borgias were traduced by an age that didn't understand perils of a germ. Its romantic associations faded. "Cancer" is now used less often as the recognition of a wide variety of the term covers a wide variety of dishonourable complaints, many of them curable or treatable, some of them a token of doom. Susan Sontag claimed "the healthiest way of being ill is one purified of metaphorical thinking". AIDS has to be seen first and foremost as a disease. Our response to it betrays first an appalling social prejudice and second an unhealthy obsession with "cure", a point of challenge on which the medical profession either succeeds or fails. The current silence on the subject of AIDS may not yet be the silence of understanding. It may still be the silence of fear.

This raised the question of notification. AIDS is not a notifiable disease, Professor Adler believes - and the Department of Health takes the same

Twelve years ago fewer than 5,000 adults in England and Wales were receiving help with literacy, at a time when the estimate of those in need exceeded the two million mark.

Provision itself was patchy. Less than half of all local education authorities offered any tuition at all and classes that were available tended to take place in orthodox classroom settings, involved large numbers of students and often used materials intended for primary schoolchildren.

By way of contrast, this year one million hours of adult education tuition will be devoted to literacy on a one-to-one basis or in small informal groups. Each local authority is now able to offer some form of service.

The transformation has taken place in a decade. Between 1975 and 1985 more than 300,000 people have received help with reading and writing. The enormous leap in the statistics and their continued upward progression are due in no small way to the work of a tiny central agency and the role it has played in forging and sustaining links between local authorities, tutors, trainers and volunteers, the Adult Literacy and Basic Skills Unit.

The unit began life in 1975 under a different name, the Adult Literacy Resource Agency, and with a pump-priming initial budget of £1 million, its creation followed a growing realization during the early 1970s that despite a century of universal schooling, large numbers of people living in a highly developed industrial society were only semi-literate: they did not possess the reading skills of an average nine-year-old.

The vigorous campaign which led to the agency's inception also stimulated interest in a different quarter - fresh from its success in marketing the Open University, the BBC was keen to embark on a second radical education venture.

It was the combination of a national television series aimed at potential literacy students and screened in peak time, backed by a national referral system operated by local authorities in conjunction with the newly-formed agency, which served to alert a vast audience to the size of the problem.

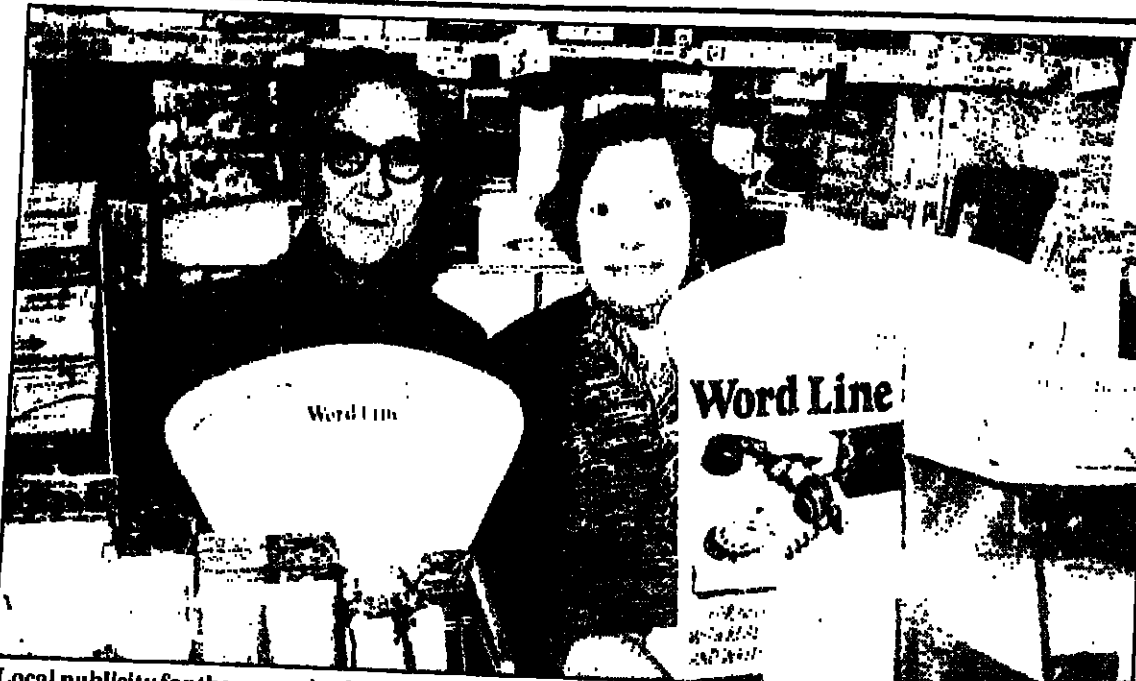
But perhaps the masterstroke in bringing literacy into the limelight was the appeal to ordinary people to come forward to assist with the project by becoming tutors.

Even the agency was unprepared for the response, both from those requiring assistance and the volunteers, eager to train as tutors. In some instances the agency found the enthusiasm of the would-be tutors overwhelming - offers of help outnumbered replies from prospective students.

The initial fervour served to establish literacy as a priority in every local authority, and to focus attention upon the issue within the Department of Education and Science.

By 1979, when the clamour had diminished, a different clientele began to emerge. Many new students were doubly disadvantaged, encountering problems in numeracy as well as literacy; others were members of ethnic minorities with linguistic problems and their needs were more complex.

Accepting the growth in these areas, the DES gave the agency a new name, the Adult Literacy and Basic Skills



Local publicity for the campaign has been imaginative and effective

Reading between the lines

Maggie Richards reveals the background to the first decade of the adult literacy campaign

Unit, and altered its remit to incorporate numeracy and English as a second language.

During the last five years the unit's task has been to preserve the cherished notion of provision by every local authority, steering a path gingerly through the cutbacks in educational spending and where possible encouraging development on a small scale through a series of special projects.

Its work during this time has not only changed, it has expanded dramatically. This year it is estimated 110,000 students will undergo tuition. The unit's director Mr Alan Wells still argues that there is a long way to go, existing provision, he insists, is only touching the tip of the iceberg.

In 1973 the scanty statistics then available were collated to produce a guinea-pig of two million illiterates. More recently, in 1981, a survey of 12,500 children born in one week of March 1958, posed questions on basic literacy and numeracy. Answers from the 23-year-olds involved indicated that 10 per cent encountered problems with literacy while five per cent reported difficulties with numeracy.

The unit envisages its role during the next decade as one of steady growth rather than rapid development. Said Mr Wells: "In a few years we have had a period of massive expansion. Viewed alphabetically, we have gone from A to E fairly quickly. Going on from E to P will be a lot more difficult. It is unlikely we will ever get to Z."

Current concern is focused on the vast disparity of provision among the local education authorities. In too many areas literacy provision is still composed of two-hourly evening sessions once a week, while increasing

levels of unemployment have generated a growing demand for day-time provision concentrated in a short period.

"Most authorities have seen literacy as a priority and have been determined to maintain their existing service, which is most heartening," Mr Wells said. "But even with that level of provision we are only scratching at the surface of potential demand."

In an effort to maintain the quality of tuition, the unit carries out consultation exercises - visiting various schemes to examine provision and make recommendations on improvements to the local authority involved. Inevitably, these suggestions involve additional financing which is not always readily available.

But the unit has no legislative right to inspect the tuition provided by each authority, and can only act by invitation. It feels, too, that literacy's non-statutory profile is equated with low status in education authority terms, and this in turn affects the funding the service is able to attract from hard-pressed budgets.

The lowly position afforded to general adult education in the hierarchy and its financial vulnerability have also hindered the development of vital bridging courses which would enable newly literate students to leap the gap between basic skills tuition and more general adult and further education.

"We do need a good legislative framework which will allow adequate levels of provision. But it would not be necessary to acquire further powers to direct schemes," Mr Wells explained.

"A great strength of our literacy provision has been that people working on the ground within schemes in their own areas have been able to decide what is best in their circumstances."

"Our aim as a central unit must be to ensure that where a student lives does not make a difference in the quality of the service he or she receives."

While the services provided by local authority in the field of literacy have expanded over the last ten years, the use of voluntary organizations - at one time the mainstay of provision - has declined.

The next decade may see a change of emphasis, however. The unit is currently exploring the potential for development among agencies not normally associated with education. These include ethnic minority groups and church organizations as the North Lambeth Day Centre for the homeless.

Over the next two years the unit anticipates initiatives in this area will grow. £100,000 has so far been set aside to fund projects with these non-educational groups.

"We would like to think it could become a more prominent feature of the provision, but we are only at the stage of testing possibilities," Mr Wells said. "Such schemes cannot be sustained on a purely voluntary basis without continued grant aid and unless they are supplementary to the service

provided by the local authorities, then there is no sense in continuing."

In the next few years the unit hopes to strengthen its work in another direction. Though the instances of children's reading materials being used for adult tuition have virtually disappeared, the unit is aware of a serious shortage in the availability of good quality low-level literature for adults.

Because production of such material may not prove economically viable for publishing houses, the unit is contemplating printing its own texts. Until now most of its highly acclaimed materials have been directed at trainers and tutors.

There is also a move to encourage literacy students to study broader issues right from the start of their tuition.

Since adding numeracy to its remit in 1979, the unit has watched demand grow steadily. Development has taken place at a slower pace than in literacy tuition, but Mr Wells argues that comparisons cannot be made.

Motivating factors are different, and the needs of numeracy students more complex. Neither does the stigma attached to illiteracy haunt those encountering difficulties in numeracy.

The problems tend to be less fundamental and not so pressing as for literacy students. Numeracy tuition caters more for those whose job prospects would be enhanced by better mathematical abilities. Students come from a far wider cross-section of society and experience problems with specific mathematical functions.

The student body as a whole has changed since the first dramatic influx in the mid-1970s. Ten years ago nearly two-thirds of students were men. Now 40 per cent are women and the number is increasing. During the early years a large number of students were aged 21 to 40. Though this age group remains in the majority, an increasing percentage now are under 21.

In 1976 only 17 per cent of students were unemployed. Currently, that number has almost doubled.

Lack of detailed statistical evidence on student characteristics, particularly information on motivation and the effectiveness of teaching techniques, has dogged the unit's development. Despite several applications, the DES has so far not earmarked funding for research. Recently the unit identified three priority areas for detailed examination: the mode of delivery; the role of volunteers; and the aims and ambitions of students.

Whatever the statistics do finally reveal about illiteracy in Britain, there is unlikely to be a return to the heady days of 1975 with a national television promotion.

There does, however, remain a strong belief in the use of broadcast media, particularly at local level, to raise public awareness. A short while ago a television public service announcement in the London area elicited more than 1,500 enquiries. It is in this direction, of more locally centred and perhaps less ostentatious educational provision, that the unit hopes to go.

Learning how to exist

In Britain, adult or continuing education is taken for granted by many people, ignored by others, scorned, rejected or praised; but at least it exists. What about this type of education provision in South America? How does it fit into the way of life of the people of Colombia, Bolivia and Peru? In what ways, if any, do adult educators make provision for the needs or wants of a mixed Indian and Spanish-speaking population? What is the underlying philosophy of Government agencies which provide such education?

In South America one quickly discovers that 'hardly anything is easy. Bogotá, the capital of Colombia, has a population of approximately five million, but that is not going to present a problem. Señora X, who possessed all the information about adult education could be found by referring to her husband's name in the telephone directory, as it was not a very common name. There was no such name in the book and no one else to contact for information, as all the university, teacher-training colleges and government education offices were closed due to student violence and teaching staff on strike.

High in the Andes at La Paz, Bolivia, the main university building was the obvious starting point. The crowd of young people sitting and standing outside weren't holding any banners or placards; on the other hand they didn't look as if they were deep in intellectual discussion. They were having a sit-out.

It became evident that the closure of educational buildings had lasted a considerable time, as some of the faculty buildings had windows broken and rubbish piled up in doorways, and the National Conservatory of Music looked as if the padlock on the front door had been rusting over many months.

Brief visits to only one town in a country does not give much opportunity for discussion and discovery, therefore Peru held out more hope, if only because a greater number of places were to be visited. A visit to Lima did produce the information that there is nothing provided in the way of organized classes where adults can meet for learning.

Driving through Peru you pass villages and small towns with adobe houses. As the colour of the walls is the same as the earth on which they stand, there is no way of distinguishing private dwellings from public buildings except for the church, the health clinic and the school.

Education for children is compulsory and free in Peru, but every child has to wear a uniform of grey skirts for girls and grey trousers for boys. If they do not wear the uniform they cannot attend school.

The teaching is in Spanish and the Indians of the small towns and villages, plus many in the cities, speak only Quechua. The subjects taught are not relevant to the agricultural and pastoral life of the poor.

Adult education flourishes in a country which has an educated population. In Britain, basic education is provided for those who were not successful in school, and by giving them a second chance we aim to improve their quality of life.

In South America they are struggling to live. It is more necessary to a family that a child should sit in a field guarding two alpacas and a cow than spend that time inside a school building. It is the money gained from begging or selling a single cigarette that helps to feed a starving child, not learning how to spell.

Adult education in Britain means moving forward intellectually by building on the knowledge we have, supported by a system in which it is understood that benefits result from learning. Adult education for most South Americans means learning how to exist with no education, no money, no food, no social security, no hope and no future.

Anne Dunn

Until the Chace Act assured foreign authors' copyright in 1891 the traditional complaint of novelists in the United States was that the country was being profoundly colonized by the importation and slavish imitation of European, especially British, ways. Some 50 years later Richard Foggart and others would lament the corruption of British youth by jive, juke boxes and milk bars. Ninety years later we expect, usually without reflection, to buy nearly all our cinematic representations, most of our novels and half our television programmes from the United States. Volume is not quality, but the former aids the latter and a British writer today might well echo the sentiments of his 19th-century American predecessor with terms reversed. When much of your economy is owned by a world imperial power you must accept client status.

In literary studies the situation can appear yet more grave, the interpretation of Britain's "great tradition" having been largely annexed by transatlantic publishers and critics: the variorum Chaucer is now under way at the University of Oklahoma (and a colleague engaged on the project tells me the North Americans complain that the Brits are trying to hijack the show!); Oxford is holding the Shakespeare and Eliot fronts, Cambridge has its Conrad but when it comes to learned literary journals which of those of the first rank does this country now produce? Even our latest literary newspaper is modelled on an American publication.

To those in agreement with the Prime Minister's flattery of Congress on February 19, our cultural dependence of the United States is a matter of small concern. The "Americans" are after all, guardians of the free world and we, like the Prime Minister, should only say how much we admire them and please will they invest in Britain. We can be sure that because of the "special relationship" our interests will always coincide with those of the United States. To many, however, this seems an increasingly naive attitude. Even conservative students of the recently published Churchill-Roosevelt correspondence have noted that as British wealth was exhausted in funding the war so American wealth was considered for our point of view. It is to me a distressing sign of British amnesia that this should now be thought a discovery, it having been perfectly apparent to the *Economist* in 1945 that the abrupt and forced conversion of Lease-Lend into the Dollar Loan Agreement, and the forcing on us of the Bretton Woods Agreement, meant that while we had fought longest and hardest we had effectively bankrupted ourselves to make way for the new American order.

In Britain today it seems that an ever wider spectrum, embracing moderate Tories and others suspected of subverting the state, is beginning to believe that we have become an aircraft carrier that will be sacrificed for US interests in the event of a nuclear war. More radical groups believe that the special relationship is just another myth assisting US world domination. The hostile noises from Washington following Mitterrand's election and the prospect of communists in the French government, the sinister rumblings at Italian election time, the suspension of elections in Vietnam in 1952, the overthrow of Allende, the support for an authoritarian Morocco and the war against the Nicaraguan people, all give the impression that in the free world are only free if they reproduce conditions favourable to US business interests.

Such issues are not foreign to the development of American studies in Britain and other parts of the world since the Second World War, for it is an intimate relation to the rise of the United States to global dominance that the discipline has evolved. To begin a sketch of its history let us recall that when Henry James published his study of Hawthorne in 1879 it was in the series *English Men of Letters*; that it was only in 1982 that Penguin transferred Hawthorne from the Penguin *English Classics* to the newly established Penguin American Classics; that the University of Exeter still brackets American with Commonwealth literature, thus following a tradition only recently shrugged by the arrangement of Cambridge finals papers. Three times between 1953 and 1968 Oxford University rejected applications from its history faculty for an established chair in American history, then finally set one up only with the help of the Rhodes trustees, American-colonial money being necessary if Oxford was to recognize the existence of the

More than good friends

Robert Clark considers the 'special relationship' between the USA and the UK in the context of American studies in Britain

Similarly it was not until 1981 that Cambridge acknowledged the important and separate nature of American history by establishing a chair in the subject, and again thanks to an American foundation (the Paul Mellon). Indeed, if American studies exists as a university discipline today it is little thanks to the intellectual curiosity of the British (a handful of devotees excepted), or to the political exigencies of our governments (who seem to have been scarcely interested in understanding this master of the world); it is thanks to the assiduous seeding by the United States Information Service and the American Council of Learned Societies of university posts in the early 1950s, and then thanks to our belated (and short-lived) effort to imitate the scholarship drives of the United States in the expansion of higher education in the 1960s. It was in that decade of Kennedy, civil rights marches, peace and love and south-east Asian war that the special relationship had its heyday and a broad fascination with things American gave impetus to American studies.

We now have a situation where American literature and history are either an optional or a necessary part in most nominally English degree programmes, and where strong centres of American studies offering degrees in American history, literature or studies exist in many universities. The recent reductions in higher education have of course set the clock back: before the war the only chair reserved specifically for an American specialist was the Commonwealth chair in American history at University College London; by 1967 there were eight specialist chairs not counting visiting professorships for Americans at Oxford and Cambridge; in 1978 there were 14; but now we are back to eight again, two on a part-time basis, and this despite the continuously rising number and quality of applicants for undergraduate courses.

The attitudes that encouraged some academics to go into American studies in the early years, and discouraged others, have informed the way the discipline has evolved. A recent issue of the *Journal of American Studies* (April 1980), published to celebrate the jubilee of the British Association of American Studies and containing autobiographical essays by those who shaped the future, conveys the ambience of the time. Far from Margaret Thatcher's servile *bonhomie*, attitudes in the late 1940s and early 1950s were characterized by the disdain, and concealed envy, that can be discerned a century or more before in Dickens's *American Notes* and Frances Trollope's *Domestic Manners of the Americans*. In the impoverished atmosphere of postwar Britain, American studies seemed a threat to nationalist integrity. A. J. P. Taylor described the new subject to Marcus Cluniffe as a "rocket" and the acolytes were touchy about being thought on a "gravy train" since scholarships to the land of plenty, and Fulbright money lubricating the conferences (1952-55) from which the BAAS would emerge, might seem to have been compromising their objectivity.

Indeed, before the gravy train pulled in no one had much considered being a specialist in American studies, the relegation in British universities of American matters to special courses of colonial status making it seem a second-rate affair. But war experience and the first wave of American mass culture created a growing enthusiasm for "over there" and persuaded some minds to convert (although most of them coyly, to



Presidents and premiers... Roosevelt with Churchill in 1941 and Kennedy with Macmillan 20 years later

many a backward glance). Such a context tended to select particular kinds of people, those prepared to act as ambassadors for the United States in a sceptical world, those interested in escaping a narrowly nationalistic self-esteem, those with a positive appreciation of energetic capitalism, the aspirant and meretricious.

Often, but by no means always, they were people from beyond Oxbridge and the home counties, people who found the British obsession with class and region either a barrier or a bore. The beliefs of such people were obviously very much in phase with the dominant ideology of the United States and they were interested in developing British understanding in an appreciative way. Only with the next generation, one that had been raised on the Kennedy ideal and confronted with the Vietnam actuality, did a more antithetical knowledge begin to develop.

The fostering of the new subject by American foundations and government agencies in the postwar years was of course no more accidental and disinterested than our own establishment of the British Council. Rather it was the corollary of the movement to re-educate the Axis powers, a generalized and systematic development of an idea of United States culture that would legitimize economic and military hegemony. The task presented the United States with more of a problem than might now be immediately apparent, the preponderance of work done in literature, and to a lesser extent in history, in American universities having been devoted to the British experience. Since independence the United States had had a healthy popular culture but until the 1930s writers whose work appeared less than clearly orthodox had been marginalized. Melville, Hawthorne and Whitman were largely neglected in their day and were only placed in the pantheon following Van Wyck Brooks's *American's Coming of Age* (1915) which demoted the popular, European-influenced, writers like Longfellow and Lowell and placed in their place more authentic "native" voices.

Henry James, of course, was about to die an Englishman; Eliot and Pound were then looking for readers in Europe having despaired of an intelligent reception at home; but Faulkner and William Carlos Williams would soon lend creative support to the critical construction of an "American tradition" by championing a determined localism, a move paralleled by the frankly pragmatic search for a

"usable past" in American historiography. By the 1940s these tendencies had begun to consolidate a sophisticated sense of American culture, a condition made evident by the publication of Perry Miller's *The New England Mind* in 1939 and of F. O. Matthiessen's *American Renaissance: Art and Expression in the Age of Whitman and Emerson* in 1941. The latter work assured the centrality of Melville, Hawthorne, Emerson and Whitman for an understanding of American culture and, through its title, fostered a myth of American rebirth that appeared more to the imagination than to historical actuality: most literary historians, Perry Miller among them, stress the continuity of a predominantly middle-class Protestant culture from the Puritans to the present, and indeed, while Matthiessen's focus on the beginnings of self-consciously nationalist writing is historically appropriate, his work conceals the more profound fact that his authors flourish by exploiting the moral and political contradictions that will soon issue in a violent civil war.

Matthiessen's careful rephrasing of Brooks's earlier epynym (also published on the eve of American engagement in a European war), says more about its own age, and its age's need of a past that predicts a millennium, than about the materials with which it deals. Its transformation of the nation's most acute political crisis, one that seemed at the time like the nation's death, into a rebirth of "America" is typical of the mythological conversions that later cultural histories were to perform. Once the war was finished Matthiessen's work was to be followed by a flurry of titles that would contribute to the image the United States needed in its years of cold war expansion. Notable among these were Henry Nash Smith's *Virgin Land* (1950), R. W. B. Lewis's *The American Adam* (1955) and Richard Chase's *The American Novel and Its Tradition* (1957), works which either directly or through their influence on other studies still provide the paradigms for the study of American literary culture today, yet which are deeply marked by the politics of their time.

While they may be distinguished by better scholarship than can be found in many subsequent works, they are written with a pragmatic readiness to dispense with methodological reflection and use any concept that appears to "work". Thus Chase describes how the American novel tends towards romance, basing his claim on a few remarks found in prefaces, but he does

not research the word's history in criticism, nor the complex connotations of Smith and Lewis for their part make much play of the words "myth" and "symbol" but brush aside questions of the origin and precise meanings of these terms, along with consideration of the social structure their production entails.

The effect of this cavalier method is to allow the construction of a remarkably erroneous image of experience in the United States, the components of which are evident in the titles. American history is seen to consist of the settlement of an empty virgin land by lone pioneers inspired by Edenic ex-ample. This is a potent image that has formed and still forms the central ground of nationalistic ideology in the United States (see Carter's and Reagan's inaugurations for example). It is, however, a complete fabrication, the land having been occupied, husbanded and defended, the pioneers having been about as independent and penceful as Kibbutzim. The repetition of this myth within cultural histories, however, is not distanced by critical discussion of actual conditions; rather it is presented as the way the nation defined itself in the past, and therefore as a way it can define itself in the present.

The reason these histories were not critical can be traced to an ideology of the text that was dominant at the time. New Criticism, the invention of a largely southern group of American critics, had stressed the autonomy of literary value from historical and biographical considerations. Richard Chase's *Quest for Myth* (1948), followed by Frye's *Anatomy of Criticism* (1957), then answered any embarrassing sense of irrelevance, these and social theories might provoke by making literature into the impersonal expression of universal myths. The first result of these ideologies of the text was that literature had to be read as disengaged from historical actuality, as prophetic, transcendental, self-referential, perhaps articulating the collective unconscious. The second result was to allow criticism to become actively myth-making, a necessary condition if one is to convert a complex history into an imperial emblem.

Fortunately since the 1960s there have been constant raids on this paradigm so despite its dominance some valuable work has been done to situate American cultural production within a thoroughly researched historical context. In this work *American Quarterly* and our own *Journal of American Studies* have taken a lead. But militating against the effort to create a synthetic understanding of American society is the disciplinary uncertainty about what American studies is, an uncertainty that Herbert Nicolas described in the jubilee volume of *JAS* as being there, at the beginning and end, of the discipline. The idea of bringing an empiricist historiography and an empiricist new criticism together was seen as a way of providing entry to imaginative consciousness and broad cultural life for one discipline, and an entry to historical relevance to the other, yet in a sense the idea of integration was a way of displacing the theoretical question: both disciplines had long been avoiding: what are the conditions and purposes governing the production of verbal representations?

The succession of anti-historical critical methodologies that have inspired literary criticism since the mid-1960s, and the movement of historiography away from a brandy humanistic account of the past towards a more rigorous, local and social scientific understanding, have done nothing to compromise the divide. Cold war origins have also left a chariness about Marxism that blocks access to the only elaborate body of critical work on the relationship of cultural to political and economic events. What is needed is a methodology capable of illuminating the relations between discourse, beliefs and acts, but for that methodology to be developed we must first have both the will and the funds to add sociology, government and philosophy to schools of study which are still predominantly staffed by letrates and historians. We must also have the political conviction that understanding how the United States thinks and behaves is a greater contribution to our national defence than improving roads around Greenham Common. For as long as our destiny depends on the way one man in Washington interprets a crisis, such a study will be no idle matter.

The author teaches in the school of English and American studies at the University of East Anglia.

T.H.E.S. Reprint Service

'Reviews of New Science Journals'

This eight page special number was published in the THES last September and journals in the following areas were reviewed.

Robot Design, Information Technology Training, Computer Science, Gravity Research, Molecular Biology, Bio-organic chemistry, Cell Biochemistry, Plasma Physics, Spectroscopy, Image and Vision Computing, Impact Engineering, Mining Engineering, Land Development Studies, New Ideas in Psychology.

Copies are available at 80p each (including postage within the UK). Please make your cheques/postal orders payable to Times Newspapers Ltd, and send to: Lesley Griffiths, The Times Higher Education Supplement, Priory House, St. John's Lane, London EC1M 4BX.

(388)

مكتبة في الأصل



Bernard Crick

Will indoctrination in education ruin our nation?

When Lord Sandwich couldn't understand what a pious peer meant by "heterodoxy", Bishop Warburton helpfully murmured, "Orthodoxy is my dog; heterodoxy is another man's dog" - or as some versions of this old tale have it, "is your dog". Still better was Neil Gwynne's cry to the mob when they stoned the painted coach she had borrowed from her rival, Louise Renée de Keroualle, Duchess of Portsmouth and Aubigny, mother of the ducal lineage of Richmond and Gordon: "No, no, good people, 'tis the Protestant whore!"

Let me say quite honestly that I cannot take the Scruton, O'Keefe and Ellis-Jones report *Education and Indoctrination* (THES May 31) as seriously as its intrinsic merits no doubt deserve. For I don't believe for a moment that they are against indoctrination so much as in favour of their own brand: a different orthodoxy, a different type of whoredom to their strange vision of British education, high and low, being ridiculed with effective leftwing indoctrinators.

My uncolleaguely lack of belief stems from having read regularly, until I switched papers again two weeks ago, Dr Scruton's silly column in *The Times* each week (that simple rightwing inversion of the old leftwing journalists' trick of "what can I say that will shock and annoy THEM most?").

You cannot expect to be taken seriously if you write like that. I wouldn't want to insult him further by implying that he really believes in a modern liberal idea of a value-free, even an open-minded education: his traditionalism simply reverts to a time, not so long ago, when all education was accepted as being authoritarian and indoctrinatory (Victorian values).

The strangest thing about their whole assumption is their belief that indoctrination (whatever it is and however practised, whether theists or the other fellows) can have much effect in such a messy, pluralistic, heterogeneous society as the United Kingdom. From their avid reading of the worst Marxist texts in order to warn others against even touching them, they seem to have taken into themselves a grossly exaggerated idea of "system" and in Scruton's case of the homogeneity of a traditional elite (the typical idealization of arrivistes and social climbers).

And they also seem to believe the contamination or "little devils" theory. This theory states that all aberrant cells, however small, are cancerous. The liberal version is that aberrant cells are benign - see how a tolerant body is stimulated by Crick's "aberrant" theory of aberrant cells is that most of them count for buggar all and none warrant calling in the surgeon or the thought police. Some call this the "commonsense" theory, or "the idea of a liberal university".

I was once, in my serious younger days, chairman of a boring working party of the Hansard Society to produce a report on political education. The first woman to be Secretary of State for Education thought it a "good idea" and approved our request for an HMI to join the working party, and the second read it all and said it was "holly good". Broadly our view was that political education began with Aristotle and, tied both to an idea of philosophical speculation and to the practice of politics as free citizenship, is as central to the Western tradition as science, art and ethics.

It could not, should not, be avoided even in schools; and that if taught, it should be taught realistically, as actual issues are mediated by institutions, not simply as a (boring and unrealistic) account of institutions (the invention of a set-menu British constitution for textbook and examination purposes). Bias cannot be avoided (after the Fall, at any rate), but gross bias can. A biased account is still recognizable, but a grossly biased account distorts perceptions.

Teachers should not aim to eradicate bias (which can exist in any subject, in arts every bit as much as in sciences, certainly in the application of medicine and technology) but rather to create empathy for other viewpoints; even to assist students for being "politically literate" who could give reasoned accounts of alternative viewpoints and courses of action.

We did not talk about indoctrination because, I suppose, my working party as practical people did not see it as a problem. Some Marxists do, of course: they see the whole educational system as indoctrinating liberal values. Oddly this seems to be the Scrutonian position too. When I talked to parent-teacher associations or local education authority conferences after the report came out, then I was often asked "don't certain subjects lend themselves to indoctrination?" I would simply point out that in British schools the odd dogmatic or crazy teacher rabbits on for 40 minutes, the bell goes, there is chaos in the corridors and the class settles down with someone else doing something quite different, or if by long odds equally dogmatic and crazy, rarely riding the same Rosinante.

When the whole tightly controlled might of the Soviet educational system now seems, throughout Eastern Europe and even in Russia itself, to be breeding a generation not of zealots but of clever cynics, what chance would a Comrade Scruton or a Brother O'Keefe have of indoctrinating the cadre with a few hours a week in a loosely structured school in a decentralized (touch wood and "Ston the Monk!") educational system? If there has ever been such a thing as "brainwashing", it has been a one to one relationship over a long period of time with a great deal of controlled sensory deprivation - conditions not common even in private schools.

If there is a problem, it is not a mass social problem of indoctrination but a rather small educational problem of occasional gross bias. And the objection to such bias is not its efficacy, but that it wastes time. The young are very sceptical. They sniff bias even before they understand its nature. If a teacher marks down for not sharing his sexist or her feminist views, most of the customers cynically write what is asked for, then go off and write something quite other elsewhere.

Most bias is water off a duck's back. I was at the London School of Economics when Harold Laski used to boast of making "positive commitment" a teaching method - to stir thought and dissent for he told us that he was tolerant as well as committed, but few students rose to this adult dialectic challenge. Most turned in parrot Laski in their scripts, but within 18 months of Laski's death they turned in parrot Oakshott. This external examiner said he didn't know which was worse - except that the former was if simplistic yet comprehensible. And for most of the other teachers, the students produced scripts with opinions, usually more biased, viewpoints.

The worst that can be said, and it should be said, is that both these strong styles of teaching wasted the time of a lot of people and did not stimulate critical thought. But it is crazy to think that either was effective or called for intolerant curses far worse than the sloppy disease, best treated locally and in the family.



Left: A stonemason at work at Canterbury Cathedral - how many students get a chance to see such skill? Above: Mies van der Rohe's controversial tower for Mansions House Square.

Brick by brick training

Edwin Johnston on the range of skills a student architect needs to learn

Architectural education is at a low ebb. Public concern in recent years about the discordant properties of modern architecture leaves little doubt about this. The contents of a famous speech, delivered in Hampton Court last spring, left architects with a host of questions; not least, perhaps, were those that related to the real need for changes in our approach towards modern architecture in schools of architecture. If there is to be a new generation of architects, they must be trained in a way that is not only different from the current one, but also one that is more relevant to the needs of the future.

What steps, then, might be considered, if architecture is to become a more significant part of community life and indeed, if architecture is to regain some of its former harmonious qualities in the buildings of tomorrow?

Vitruvius once described the training he considered necessary for an architect: "Let him be educated, skilful with a pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinion of the jurists, and be acquainted with the astronomy and the theory of the heavens".

Today, the student of architecture is required to undertake five full-time years of study, coupled with two years of professional practice in an architect's office. Most of this period will be spent on hypothetical design projects for buildings and will be supplemented by lectures in specialist subjects. The education may take place in a university, a polytechnic, or perhaps a school of art, but the real learning will begin with the day-to-day experience of working in an architect's office.

The remoteness of a mainly theoretical approach, isolated from the realities of the building site, was a matter that concerned some of the outstanding architects of the Victorian era. Writing about the work of Philip Webb, a co-founder with William Morris of the influential Arts and Crafts movement, the author and educationalist W. R. Lethaby commented: "The beginning of training for building and design must be on the works and in the shops. Architecture is a responsible business, like commanding a ship. Building is an act of doing".

One of Lethaby's beliefs was the crucial importance of making adequate provision for the student of architecture to learn directly from the skills and experience of the craftsman, so that his imagination might be kindled by a knowledge of working with building materials. In his view, then, nothing was more fertile in suggestions of new forms than the handling of materials. How many students today one wonders, have the experience of watching a craftsman at work, or perhaps catching a glimpse of the interior of a joinery workshop, before they graduate with a degree in architecture? Clearly there are fewer craftsmen around in the building industry of the 1980s so opportunities are fewer than in Lethaby's day, but nevertheless the current growth in demand for conservation offers new chances.

One of the extraordinary aspects of education today is the relatively few schools of architecture that are equipped to offer a course in conservation or rehabilitation. This work comprises an important and specialized aspect of the profession's workload. All too often, perhaps, an interest in the conservation of buildings inherited from the past tends to be viewed as representing a force of opposition to those architects who express a preference for modernity. It is a most unproductive intellectual polarization and one that was clearly seen to emerge from the debate round the proposed construction of a building in London designed by the late Mies van der Rohe.

Conservation is, of course, concerned with a wide range of differing kinds of problems that relate to both past and present, apart from reflecting the measure of our care about historic buildings. If conservation were to be accommodated in the syllabus of schools of architecture, it would provide the student with opportunities to learn about local architectural history, traditional forms of buildings construction and regional characteristics in architecture.

The growth of what is commonly known as "community architecture" is a positive response to some of the complex problems caused by the plight of our inner cities. Changes in the pattern of modern employment from long term to short term, and Government resources made available for self-help urban projects also represent areas in which schools of architecture could provide a design service for local communities.

A re-evaluation of the balance of design programmes in schools of architecture, between those that are

Lloyd deMause explores America's secret life; Anthony Stadlen reexamines a classic case

The fantasy life of nations

If psychohistory is the psychoanalytic study of historical motivations, then the first such work was Freud's paper on Leonardo da Vinci, written in 1910. For the next 60 years, psychohistory was only psychohistory - the study of individuals - usually done from highly distorted secondary sources, usually by psychoanalysts untrained in historical research, and usually written after heavy patient loads. The results were predictably uneven.

There were no professional psychohistorians or scholarly journals or organizations in the field until the 1970s, when America experienced a flowering of research and a proliferation of college courses in psychohistory, leading to the foundation of *The Journal of Psychohistory*, *The Psychohistory Review* and the International Psychohistorical Association, with affiliates in seven countries. This new research began for the first time to explore from primary sources the full historical record pertinent to the motivations of groups as well as individuals. As a result, psychohistory today is generally understood to be divided into three components: the history of childhood, psychoanalysis and group psychohistory.

The basis for this division lies in the use of a psychogenic (rather than economic) theory of history which views historical motivation as the outcome of evolving childhood experience being acted out by a generation later on the adult historical stage by means of group-fantasies - shared feelings about how it feels to be part of a group at a particular point in history.

It was in the exploration of this new paradigm of group psychohistory that new tools have been fashioned which allow an understanding of what goes on in the shared unconscious emotional life of nations. The technique of

fantasy analysis was developed at the Institute for Psychohistory, and it has been tested in various countries in hundreds of different historical situations as a method of content analysis of the metaphors, similes and strong emotional terms used in speeches, press conferences, media headlines and political cartoon imagery.

In every case where fantasy analysis was used, psychohistorians have uncovered previously unnoticed patterns in the fantasy life of nations. For instance, regularly recurring cycles have been confirmed, consisting of stages of "strong", "cracking", "collapse" and "upheaval" imagery, fantasies which depend primarily on feelings about the leader and his or her ability to contain the growing rage and paranoid anxiety which the nation experiences as the leader's term of office grows older.

This rage eventually gets directed by the leader - who acts as a delegate of the nation's wishes - either into an internal sacrifice (recession) or an external sacrifice (war). Since the irrational emotions which get dumped into the political sphere ultimately originate in the attempt to relieve individuals of personal unhappiness - that is, of unhappiness over the failure to find love - the four stages of the cycle occur with slight reference to the events of the real world.

In my book *Reagan's America*, I analyze why most nations take about one generation to cover the full cycle of group fantasies and why the cycle usually ends in a war (America, England and Russia having had a war every 18 years, France every 20 and Germany every 24, century after century as far back as records exist). The purpose of these wars, I argued, is to sacrifice a portion of each new generation of youth as a token of our vitality, rather like the periodic sacrifices of youth "to clear the country's pollution" found in many early civilizations. The war sacrifice always follows periods of prosperity and rapid social change. Since it takes a "tough" leader to carry out such bloody sacrifices, I tried to show that nations regularly chose such leaders - like Ronald Reagan and Mrs Thatcher - who have lacked the experience of warmth in their childhoods.

Reagan, like Mrs Thatcher, had a sad, solitary childhood notably lacking in parental support and full of punitive warnings against self-indulgence. He was, therefore, like Mrs Thatcher, the perfect person to elect when the nation wanted recession and war.

By investigating unconscious as well as conscious motivation, psychohistory produced evidence which turned upside down almost every traditional assumption of viewing history.

Rather than being about how public events affect private lives, history is seen as how private families are acted out on the public stage. Rather than how leaders exercise power over masses, psychohistory stresses how nations give daily instructions to leaders who are actually delegates of the people's hidden wishes, "containers" for projected parts of themselves.

Rather than being mainly about the activities of men, history is seen as determined first of all by women and children and only later reflected in the public activities of men. Rather than the two world wars being caused by "the shot at Sarajevo" and "that madman Hitler", they are instead shown to be wishes carefully prepared by the joint efforts of the entire European "family of nations".

Most psychohistorians today are not only trained in both psychoanalysis and history or one of the social sciences, but more importantly have had



Dora's illness: a case for historical detection

Freud presented certain case histories, dream interpretations and analyses of slips and jokes as paradigm cases. He distinguished between true paradigms and mere examples. He used countless examples to illustrate bits of theory, but his paradigm cases were a small number of fundamental examples intended to illumine or embody a whole theory. For them he used the words *Vorbild* ("model"), *Muster* ("muster"), in the old sense of "model example" or "pattern" and *Paradigma*.

He used *Vorbild* for the Lucy R. and Katharina cases, the dream of child building, the forgetting of the name "Signorelli", the joke of the *Schurrrer's* visit to Ostend. He used *Muster* for the Irma dream, Dora's dreams, the second telling of the Ostend joke. He used *Paradigma* for the reworking of the "Signorelli" analysis in *The Psychopathology of Everyday Life*, the *aliquis* analysis, the Frau E. L. dream in *On Dreams*. Thus he sometimes used more than one of the three words to refer to the same paradigm case.

Freud presented these paradigms as natural-scientific and medical. In the *Frauen Elisabeth von R.* case he wrote that his case histories "have to be read as short stories"; but, he wrote, they "demand to be judged as psychiatric ones". They have, he said "one advantage": "the intimate relationship between *Lebensgeschichte* and illness-symptoms". The German term means "history of suffering or tribulation".

Thus Freud's histories of passion and tribulation are given not for their intrinsic value but for the light they throw on the "illness-symptoms". This light illumines paradigmatically the form of the relation between these two realms. Freud claimed this not only for his case histories but also for paradigm dream interpretations and analyses of slips.

Freud, then, compared his achievement to those of Copernicus and Darwin. He claimed to have brought about the "third and most wounding" natural-scientific revolution. His claims for the paradigm

hypothesis to be tested. His truth can not simply be presupposed. It has been presupposed in even the most critical literature on the Dora case.

The central scene of the case is well known. It happened in Herr K.'s shop. Herr K.'s wife was having an affair with Dora's father who had been treated by Freud for syphilis. Dora was, in Freud's words, "a child of 14". Herr K. had invited her and his wife. They were to witness a church procession.

"He persuaded his wife, however, to stay at home, and sent away his shop assistants, so that he was alone when the girl arrived. When the time for the procession approached, he asked the girl to wait for him at the door which opened on to the staircase leading to the upper story, while he pulled down the outside shutters. He then came back and, instead of going out by the open door, suddenly clasped the girl to him and pressed a kiss upon her lips."

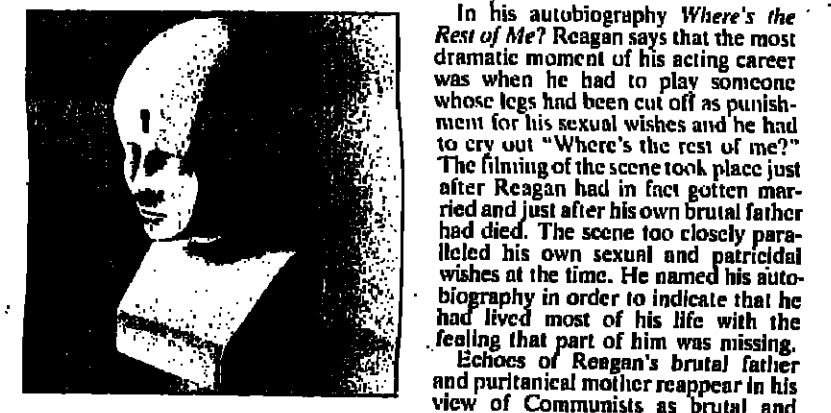
Dora was disgusted. She "tore herself free from the man, and hurried past him to the staircase and from there to the street door". Freud considers this response of Dora's sufficient ground to diagnose her "without question" as an "hysterical".

Dora alleged that there was a tacit agreement between her father and Herr K. The agreement, as she saw it, was that her father would permit Herr K. to molest Dora sexually in return for sexual favours from Herr K.'s wife. Freud says this was "one particular respect in which it was easy to see that they were justified, he saw her as sick for making them."

Freud speculated that Dora felt Herr K.'s erect penis pressed against her in his shop. This did not lead her to question his diagnosis.

Psychoanalysis has generally endorsed Freud's diagnosis an pathological "symptom". The *Encyclopedia of Psychoanalysis* explains: "The feeling of disgust she felt when Herr K.'s erect penis pressed against her body (at 14) probably meant that she resented the size of her own member."

Erik Erikson in 1962 questioned "Freud's assertion that a healthy young girl would under the circumstances have considered Mr K.'s advances 'either tactless nor offensive'". He wisely closed that this of



inquiry by observing: "The nature and severity of Dora's pathological reaction make her, of course, the classic hysteric of her day"; he thus endorsed Freud's "symptom" as do most critics of the case. A few dispute it but do not dispute the diagnosis (they do not say why they do not). A very few doubt the diagnosis but say she was "psychotic". Family therapists, historians, feminists have studied different aspects of Dora's "illness". Virtually all agree she was "ill".

It is important to know the answer to the question whether the subject of Freud's and psychiatry's principal paradigm case for "hysteria" was an "hysteric". But, in a sense, it is more important to know why this question has not been asked than to know the answer. To investigate the case entails some attempt to identify the principals, places and times of the case history, interviewing survivors and witnesses, searching archives and examining documents, all in order to clarify the events and test Freud's reporting of them and subsequent diagnosis in the light of such historical detection.

It is important to ask, and to investigate scientifically, whether the failure of so many even to ask whether Dora was "ill" is an unfortunate accident or, rather, an example - even a paradigm case - of something fundamentally wrong in psychoanalysis and psychiatry.

The author is an existential analyst in private practice in London. His research into the foundations of psychoanalysis is sponsored by the department of philosophy, University of Essex, and supported by the Nuffield Foundation.

مكتبة في الأصل

BOOKS

Rhetorical dimension

Between the Library and the Laboratory: the language of chemistry in eighteenth-century France by W. C. Anderson
Johns Hopkins University Press, £20.00
ISBN 08018 3229 2

Wilda Anderson's book develops a refreshingly novel approach to one of the most familiar areas in the history of science: the "chemical revolution" of the late 18th century - a prominent part of the historical mythology imbibed by most students of chemistry. Its leading figure, Antoine-Laurent Lavoisier, also plays a part (albeit a minor one) in the history of the Enlightenment and of the French Revolution. The broad outlines of Lavoisier's achievement are well recognized, although it would be true to say that a thorough modern synthesis of its various aspects is still lacking.

Rather than attempting to provide that synthesis, Professor Anderson concentrates on a relatively neglected aspect of the chemical revolution: the protagonists' attitudes to language, and the literary representation of chemical discourse. Her methods seem particularly suited to the study of the history of chemistry, a science somewhat preoccupied with problems of nomenclature and other forms of linguistic and symbolic representation.

Anderson's strategy is to set Lavoisier's work against that of the leading French chemist of the previous generation, Pierre-Joseph Macquer, whose *Dictionnaire de chimie* (1766) exemplifies the concerns with pedagogy, clarity of expression, and systematic ordering of information, which Anderson sees as related to the moral and political imperatives of chemistry under the aegis of the Enlightenment. Chemistry in this period, she claims, was a discipline in name only, unified by rhetorical techniques of presentation in textbooks, but lacking any unifying theory. Macquer's dictionary format helps her to make the point effectively: although the book's historical introduction provided a historical legitimacy for the discipline, the reader was left free to construct his own theory, by combining the separate articles in his own mind through following up the cross-references.

Lavoisier's "revolution" in chemistry has traditionally been identified with his replacement of the existing theory of combustion, the fictitious entity "phlogiston" giving way to the newly-discovered gas "oxygen". According to Anderson, however, Lavoisier's more permanent achievement lay in his break with the rhetorical and epistemological structures of Enlightenment chemistry, represented by Macquer's *Dictionnaire*. Her characterization of a whole "enlightenment

epistemological construct", on the basis of a single supposedly replaceable term, must remain questionable. But her account does serve to focus attention on two previously neglected aspects of Lavoisier's "revolution": the rhetoric of his attack on the phlogiston theory, and the reform of chemical nomenclature which he introduced with three other French chemists in 1787.

Both aspects depend, in Anderson's view, on Lavoisier's presentation of his own theoretical position, and of his own interpretation of experimental results, as "natural". Lavoisier's written style thus heralds the disappearance from visibility of the rhetorical representation of his discipline. And in Lavoisier's new nomenclature, the autonomy of the author is replaced by that of the system of names: a new language for chemistry which determines the limits of what can be said, an artificial language which is presented as "natural".

For Anderson, then, the chemical revolution represents the end of the avowed use of rhetorical techniques in scientific writing. I imagine she would claim, however, that scientific language retains a rhetorical dimension to this day, albeit unacknowledged by most scientists. Rhetorical techniques are being used whenever language is mobilized to persuade; and even when the persuasive power is supposed to reside in experiments, those experiments must be described and interpreted linguistically in order to convey their meaning.

Anderson's sophisticated use of the methods of literary criticism is well adapted to expose the rhetorical dimension of science. But in order to understand historically the development of scientific language, we also need the methods of the social historian. And here, Anderson is disappointingly weak in her coverage of the historical context of the texts she studies. For example, more information about the relations between chemical pedagogy and the ethical and political concerns of the French Enlightenment might have been of interest. More crucially, Anderson fails to make any identification of the audience for the texts she discusses; although, in assessing the rhetorical impact of the texts, she constantly refers to "the reader", she never states who the readers of the texts are in question actually were. My own view is that it is only when the attempt is made to provide such an analysis of readership, that the insights of literary critics will be used profitably to construct a fully historical account of the development of scientific language.

J. V. Golinski

J. V. Golinski is a temporary lecturer in the history of science at the University of Lancaster.

Discovery and Invention: a review of films and videos on the history of science and technology, edited by Cathy Grant and James Ballantine. Published by the British Universities Film and Video Council at £7.00.

nautical history are unusual in that they have been written by professional historians.

Roger Bilstein, professor of history at the University of Houston, has bravely tackled the whole subject in all its aspects: aircraft and space vehicles, technical developments and social sequences, engineering and economics, civil transport and military operations. However, although the title of his 350-page book purports to confine him to America, in practice he quite naturally includes foreign activities whenever relevant. Thus, there are references to the French air service's Lafayette Escadrille of American volunteers in World War I; to the British and German development of jet engines in the late 1930s; and to the launching of the first Russian satellites in 1957.

The book is organized into eight chapters, each covering approximately ten years, within which a wide variety of topics are covered. As a typical example, a seven-page summary of the pages on blizzard relief and exploration flights into hurricane, then three pages on the Berlin airlift. The chapter concludes with an account of the nearly disastrous decline of the post-war light aircraft industry, which sold 33,000 aircraft in 1946, 16,000 in 1947, 3,500 in 1949 and 2,300 in 1951, and its

Case histories

The Clinical Consultations of Giambattista Morgagni: the edition of Enrico Benassi (1935)
Translated and revised by Saul Jarcho
University Press of Virginia, \$42.50
ISBN 08139 1033 1

Giambattista Morgagni (1682-1771) had an international reputation in his own day as an outstanding anatomist, pathologist and clinician, even if the University of Padua (where he was a professor for more than 60 years) no longer enjoyed quite its past glory, with Vesalius, Fabricius ab Aquapendente and Galileo among its former professors, and William Harvey one of its old boys. Morgagni's *De sedibus et causis morborum* (1761) is a cornerstone of modern pathology. Published in his old age, it distilled his vast erudition and clinical experience, with the aim of correlating systematically the signs, symptoms and course of diseases with the pathological changes that can be uncovered through post-mortem dissection. It was translated into English (in three stout volumes) by Benjamin Alexander in 1769, as *The Seats and Causes of Diseases*.

Morgagni wrote a number of other books, particularly on anatomy but touching virtually the whole of medicine. Despite his fame, however, none was ever translated into English, and outside his native Italy Morgagni has remained a rather shadowy figure. The present volume is therefore especially welcome, not least for the long and sympathetic introduction by the editor and translator, Dr Saul Jarcho, in

which he analyses not simply Morgagni's *consilia* but throws much new light on Morgagni's place in the medicine of his time.

The publication of consultations was established medical genre, effected by many elite practitioners from Taddeo Alderotti (1260-1303) to Hermann Boerhaave (1668-1738). Their didactic value was obvious, since they offered the opportunity of discussing the causes, probable course and preferred therapy and management of selected individual cases. The consultations themselves also had the more immediate goal of postal advice, either directly to sufferers, or indirectly through his local doctor. The latter function had already been satisfied in the hundreds of cases Morgagni selected from the much larger number of opinions he had been asked for during his long career. In the event, neither Morgagni nor his executor got around to publishing them and they found their way, along with other unpublished holograph manuscripts, to the Biblioteca Palatina in Parma. The *consilia* were eventually edited in 1935 by an Italian radiologist, Enrico Benassi. It is this edition which Jarcho has translated, adding his own long introduction and expanding many of Benassi's explanatory footnotes.

The value of the consultations lies in the insight they provide into the practical workings of Enlightenment medicine. A few of the requests came directly from individual sufferers, but most derived from physicians and surgeons dealing with a puzzling case for which they wished Morgagni's advice. A current historical wisdom concerning 18th-century medicine has it that medical and lay thinking about health and disease were so integrated that doctors and their patients spoke the same language (and that patients who paid the doctor called the tune).

Morgagni's consultations do not entirely bear out this generalization. The consultation requests came from other practitioners rather than from the patients themselves, and partly from the limitations which Morgagni recognized were inherent in the epistolary interchange. We are often told that 18th-century doctors did not need to examine their patients, since they relied on the patient's own formulation of his problem. Morgagni knew better: he often tempered his comments with the caveat that his knowledge was but partial and instructed his colleagues to examine their patients (even vaguely, if necessary).

The range of medical and surgical problems dealt with in the 100 consultations was large, including tumours, abscesses, venereal disease and aneurysms. Morgagni's therapeutic recommendations were traditional: herbal remedies, baths, dietary changes and regular living. "The bowels should be kept in order and the mind should be calm", he wrote of one pregnant lady suffering from nephritic pain - a lot of the history of therapeutics has had those aims in view. Some of the details of Morgagni's therapeutics are of interest, but the major value of the *consilia* is that they show us the practical ways a major figure like Morgagni thought about the preservation of health and the treatment of disease, and display the variety of doctor-patient relationships in the relatively unstructured medical world of the Enlightenment.

W. F. Bynum

W. F. Bynum is assistant director (research) at the Wellcome Institute for the History of Medicine, London.



Middlesex Hospital, London, in 1835, from *The Middlesex Hospital Medical School: centenary to sesquicentenary 1935-1985* by Sir Douglas Ranger (Hutchinson, £9.95).

the numerous threads of the opinion-forming activities of politicians and being Lord Northcliffe.

By late 1905, the Wrights, who had developed - far ahead of any other experimenters - a thoroughly practical aeroplane which could fly for over half an hour, decided to sell their invention to a government, either their own or some major foreign power. For a large sum of money. From 1905 to 1908, they were engaged in a series of negotiations with various governments, all of which ultimately proved fruitless, mainly because the Wrights refused to show their aeroplane until a contract had been signed. Gollin concentrates on their negotiations with the British, which he has researched very comprehensively in the Wright archive and in the British Public Records Office.

Gollin traces four separate attempts by the Wrights to sell their invention to the British government. His major discovery is Lady Jane Taylor, widow of a general and with friends in high places, who was employed as an agent by a firm of American arms dealers who claimed to know how to deal with ineffectual efforts to sell the Wright aeroplane produced one of the classic quotations of aeronautical history. In a letter to her in 1907, the Flight Lord

regretted that the Admiralty, having taken expert advice on the matter, "are of opinion that they [aeroplanes] would not be of any practical use to the Naval Service".

The details of the various negotiations are perhaps of interest only to a handful of aeronautical historians, but the wider theme of the developing awareness of the threat to Britain from an important element in our political history. If Gollin continues this in later volumes with a similar standard of scholarship, we shall be greatly in his debt.

John Bagley

John Bagley is curator of the aeronautical collection at the Science Museum, London.

The proceedings of a conference on *Science and Uncertainty*, held in London in March, 1984, have been edited by Sara Nash and published by Science Reviews Ltd at £25.00.

Donald Worster's *Nature's Economy: a history of biological ideas* first published by Sierra Club Books in 1977, has been re-issued by Cambridge University Press at £25.00 and £7.95.

BOOKS

Rival cultures

Pagan Rome and the Early Christians by Stephen Benko
Batsford, £14.95
ISBN 0 7134 4800 8
Christianizing the Roman Empire by Ramsey MacMullen
Yale University Press, £18.00
ISBN 0 300 03216 1

"I have described the triumph of barbarism and religion," said Gibbon, but the triumph of Christianity, accomplished during the hundred years after its emergence from the shadows of persecution, remains among the most puzzling as well as the most momentous aspects of the transformation of the Roman world.

It was far from being the case, as textbooks and essay writers like to think, that Constantine somehow settled the matter by making Christianity the "official" religion of the empire. He did neither, as Ramsey MacMullen argues with characteristic pungency. Moreover, the ascent to power and wealth which he inaugurated was slow enough to leave the pagan aristocracy of the western empire still with good hopes of reversing it when they seized the throne in 394, only to be frustrated by a miracle and a military defeat. Even then, though the aristocracy lost no more time in joining, and taking over, what it had failed to beat, MacMullen doubts whether Christianity had achieved anything like majority support.

The ascent was, on the face of it, all the more surprising because Christianity had so deeply offended the ordinarily tolerant empire, and exposed itself to intermittent but bitter persecution in consequence. Stephen Benko seeks to understand this hostility from the pagan point of view. So he is concerned not only with what the Romans thought about the Christians - that they were fanatical and superstitious Jewish zealots, who dabbled in sorcery and probably in orgies and cannibalism, while hypocritically denouncing as superstition the rituals of other cults - but why they thought so.

Most Romans knew little or why should they? - of the murky religious underworld of the Middle East, where charlatans, preachers and magicians abounded. Some Christian language and ritual, especially that connected with communion, easily gave rise to genuine misunderstanding. Benko's patient exploration of the border between misapprehension and plain bigotry is interesting and often illuminating, but it surely misses the main, if scarcely novel point. Like their counterparts in other preindustrial empires the Romans were enabled to rule over a vast array of mutually ignorant and non-communicating cultures by their shared possession of a literate high

culture which gave them identity, commonness and the means of domination, a fact of which they were as explicitly conscious as any sociologist. That culture was not challenged by the innumerable cults which it spread beyond their native communities or into the ranks of the literate could be vaguely but easily assimilated into the all-embracing veneration of the sun, acknowledging the primacy of Roman values.

But Christianity's repudiation of all gods but its own attacked the foundation of the culture in which the empire was hedged. Beyond that, its claim to universality (which the Jews, for instance, did not make) proclaimed it a rival high culture in the making whose goal could only be to replace the empire itself, as its holy books would replace those of classical Rome. Behind the rumors, secrets and misconceptions which Benko examines so painstakingly lay a perfectly accurate assessment of the threat which it presented to the very heart of Roman-ness.

All the more need, then, to find an explanation of the triumph of Christianity which is appropriate to its scale, as MacMullen insists. Why did so many millions come to accept its dominance without necessarily endorsing its teaching, let alone undergoing individual conversion experiences of the intensity of Marius or Augustine? MacMullen directs attention to three things in particular. The success of the early Christians as exorcists

brought them widely-discounted and tenacious common power. The transfer of wealth from paganism, which Constantine achieved on a huge scale, largely by terror, enabled Christians not only to build churches and to support paganism in a variety of social and charitable functions. "It is generosity towards non-members, pretended holiness of life that have specially fostered the growth of adhesion," said Julian the Apostate. And the open violence against temples, shrines and schools which reached a new level of intensity and ferocity in the 380s and afterwards, depicted here with telling economy, destroyed the social fabric of paganism.

All good answers raise more questions. What enabled this power to be unleashed? The passion of the actors and the cynical confidence of their leaders that the end justified the means recall many another revolution. "Should not the rigour of the law yield to pity?" asked St Ambrose even when the Emperor Theodosius thought that the bishop and monks of Callinicum had got a little far in turning down the synagogue. And, like many another revolution, it leaves us endlessly fascinated, and still wondering what it was really about.

R. I. Moore

R. I. Moore teaches history at the University of Sheffield.

Splendid isolation

Herodotus the Historian: his problems, methods and originality by K. H. Waters
Croom Helm, £15.95
ISBN 0 7099 3601 X

It seems to be extraordinarily hard to keep a level head where Herodotus is concerned. In antiquity the plaudits ("Father of History", "most Homeric") alternated with the rebukes ("Father of Lies", "wag-lavender"), as they have done ever since. Part of the trouble is that, in A. D. Momigliano's deceptively banal phrase, "there was no Herodotus before Herodotus" - or after him for that matter. He stands in irreducibly splendid historiographical isolation with no very substantial ancestors and no significant descendants in the direct line.

Another major difficulty for the historiographer is the extreme paucity of reliable biographical information on Herodotus, who wrote before the Greeks took much interest in the lives of authors. It seems plausible to suggest that being born in a mixed Greek and non-Greek community on the fringes of the Persian Empire in the 480s had something to do with his choice of subject, relations between Greeks and non-Greeks with special reference to the conflict that culminated in the so-called Persian Wars of 480-479. Enforced political exile from his native city may well have caused



him furiously to think about all sorts of things, besides allowing him to indulge the penchant for travel that seems, remarkably, to have broadened an already perhaps unusually tolerant mind. But what precisely caused him to invent an entirely new genre of literature will always be baffling scrutiny.

Both these major obstacles to our understanding are faced squarely and patiently by Professor Kenneth H. Waters of Hobart in his new book, which is pervaded none the less by a powerful admiration for the man whom he describes simply in a prefatory brief "life as 'Herodotus of Halicarnassus' (later as 'Thucydides')". His admiration, as will appear, may need to be tempered somewhat, but it also merits respect, since he has lived with Herodotus for some two decades and has published several scholarly articles on both literary and historical aspects of the *History* in addition to a monograph on the objectivity of Herodotus' treatment of tyrants and despots (not necessarily the same thing in Archaic Greece).

Paul Cartledge

Dr Cartledge is a fellow of Clare College, Cambridge.

Medieval learning

The Growth of English Schooling 1340-1540: learning, literacy and intellectual life in Pre-Reformation York diocese by Jo Ann Hoepfner Moran
Princeton University Press, £43.10
ISBN 0 691 05430 4

Ever since the 1890s it has been known that schools existed in England far back into the middle ages, taught by professional masters and open to the public. Unfortunately A. F. Leach, who first drew attention to this, was an opinionated and inaccurate scholar whose work aroused suspicion, and it has taken a long time for other people to correct and confirm his findings. We now accept that there were larger numbers of schools, lists have begun to be made, and many of the names of teachers and students have been identified. Most recently attention has turned to the masters' textbooks and pupils' notebooks, scores of which survive with the actual material used in classrooms.

Dr Moran begins her book with a useful chapter surveying the writings on medieval schools since Leach, and follows with two more which give a general account of what the schools were like. Schools were mainly located in towns but could also be found in the countryside. As well as those for the public there were private schools attached to noble households and religious houses, and some pupils were taught individually by parish clergy. Learning began with reading and went on to penmanship (and sometimes polyphony). Latin grammar and writing. The author could well have stressed that all who studied grammar by the 15th century learnt to write in doing so. Nearly all pupils were boys, and girls appear comparatively rarely and at an elementary level. All this is well established, and it is fair to say that the general chapters accord with current views rather than changing them.

The core of the book and its central contribution is a study of schools in the ancient diocese of York, which covered Yorkshire, Nottinghamshire, north Lancashire and the Lake District. Research since Leach has steadily increased the number of known schools, and Dr Moran's work continues this process. She has tracked down far more in the area than were known before, and usefully lists them all in an appendix. Evidence is provided about their type (reading or

grammar) and continuity, and though some of the "schools" are references to scholars and choristers whose learning was probably private and informal, this is easily discovered from the list. Many names of masters and pupils are also given, though in view of their value for prosopographical research, it is a pity that they are not all listed or referred to.

The last three chapters seek to place school education in York diocese in a wider context. There is a good study of clerical ordination in the area, which may have had an influence on the number of schools, and an examination of literacy and book ownership. Dr Moran produces many examples of both, but it is not altogether clear how those who could read differed in their culture from those who could not. The final topic is the "institutionalization" that during the 15th century, schools increasingly catered for the laity and were controlled and financed by them.

This is a difficult topic. Education before 1400 may appear more clerical, in that schools were nominally under clerical control and trained large numbers of boys to be clerics. But many of those boys were supported at school by their parents (lay people); clerical schoolmasters depended on lay parental fees for their livelihood, and the nominal clerical jurisdiction over

schools rarely led the clerical authorities to interfere with them. Ironically it was at the Reformation, in many ways a movement of institutionalization, that regular licensing of schoolmasters was introduced for the first time in 1534, to be exercised by the bishops!

Dr Moran asks whether there was an educational revolution in the 16th century, as one or two historians have suggested, or whether it should be placed earlier. The answer is both, or neither. School education has always been new and changing. Latin in Anglo-Saxon England was being taught to non-Latin speakers for the first time. Secular schools proliferated in the 12th century, and educational theory in the 13th. The 14th and 15th saw the endowed school, the time-tabled day and the revival of Latin teaching in English. Humanist Latin and Greek, on the other hand, like the form system and state intervention, were developments of the 16th. A sympathetic observer can see something to praise in every period, and there is no point in a struggle for possession of "the" educational revolution, for no such single event has ever happened.

Nicholas Orme

Dr Orme is reader in history at the University of Exeter.

NEW BOOKS

Mississippi Writers: Reflections of Childhood and Youth

Volume One: Fiction
Compiled and edited by Dorothy K. Abbott
This book features twenty-six works of fiction by such acclaimed twentieth-century writers as Faulkner, Welty, Percy, Wright, Williams, Morris, Gilchrist, Lannan, Spencer, and others.
Cloth £35.00
Paper £14.95
UNIVERSITY PRESS OF MISSISSIPPI

Prophecy and the Philosophy of Mind

Traditions of Blake and Shelley
Terence Alan Hoagwood
This book explicates two traditions: British philosophies of the 17th and 18th centuries, and the aesthetics of biblical prophecy. The Hoagwood shows how these traditions unite in Blake's *Jerusalem* and in Shelley's *Prometheus Unbound*.
Cloth £25.50
UNIVERSITY OF ALABAMA PRESS

Hawthorne: Calvin's Ironie Siegel

Agnes McNeill Donohue
The influence of New England Puritanism on Hawthorne has been touched on by many scholars, but none has treated it so thoroughly or seen it as so central to an understanding of his works as does this study.
Cloth £27.50
KENT STATE UNIVERSITY PRESS

Henry James and the Problem of Robert Browning

Ross Posnock
The author's analysis of this relationship between two major authors cuts across traditional boundaries dividing American and English literature, poetry and prose, and explores a new chapter in literary history.
Cloth £24.00
UNIVERSITY OF GEORGIA PRESS

Reversible Readings

Ambiguity in Four Modern Latin American Novels
Paul B. Dixon
In his study of four modern Latin American novels (two Brazilian, one Colombian, and one Mexican), Dixon focuses upon expressions that are reversible, or at least prompt mutually exclusive hypotheses.
£18.75
UNIVERSITY OF ALABAMA PRESS

The Life and Illustrious Martyrdom of Sir Thomas More

Thomas Stapleton
"remains a document of prime importance in More studies, and it is especially valuable in the More biography, inasmuch as it gathered information from edited materials of the More circle and extracted from or printed letters preserved by John Harris, More's secretary, which we do not find elsewhere." - *The Catholic Historical Review*.
Paper £7.50 (a reprint edition)
FORDHAM UNIVERSITY PRESS

Origins of the Domestic Dog

The Fossil Record
Stanley J. Olsen
Stanley Olsen offers his conclusions on fossil finds from the world in this first book-length study of the history of canid domestication.
Cloth £49.50
UNIVERSITY OF ARIZONA PRESS

Content

A Contemporary Focus 1974-1984
Howard N. Fox, Miranda MacLennan, and Phyllis Rosenzweig
MacLennan and Fox examine contemporary artists' exploration of language and meaning, the self and its identity, images of high and popular culture, myth and ritual, regionalism, social concerns, nature, and the psychological/philosophical/metaphysical problems of life and death.
Cloth £29.95
SMITHSONIAN INSTITUTION PRESS

Books published by the European University Press Group are available from stock held in the UK and can be obtained through your bookseller. Please send for catalogue.

EUROSPAN
University Press Group
3 Henrietta Street, London WC2E 8LU

Airborne invasion

Flight in America, 1900-1983: from the Wrights to the astronauts by Roger S. Bilstein
Johns Hopkins University Press, \$32.50
ISBN 0 8018 2973 9
No Longer an Island: Britain and the Wright brothers, 1902-1909 by Alfred Gollin
William Heinemann, £18.00
ISBN 0 434 29902 2

On 17 December, 1903, Wilbur and Orville Wright made four flights - the longest lasted 26 seconds - on their wood and fabric biplane powered by a home-made 12 horse-power engine. About 80 years later, millions of passengers are carried by air over all parts of the globe, and the vast numbers of aircraft and missiles increase daily. Several thousand books have been written about the history of this means of transport, or about specific elements of it, almost all of which have been written by journalists, engineers or pilots. These two books on aero-

كتاب من الكتب

BOOKS

Civic values

Habits of the Heart: Individualism and commitment in American Life by Robert Bellah, Richard Madsen, William L. Sullivan, Ann Swidler, Steven M. Tipton
University of California Press, £15.95
ISBN 0520053885

This earnest, elegantly written inquiry into the state of American moral character sets one wondering why a similar study would be so unlikely in the British context. There is a vigorous British school of moral philosophy, but it is hard to think of a British equivalent to the American sociology of ethics. The great subject of British sociology - from Booth to Rowntree to Goldthorpe and Townsend - has always been class, not moral character - and apart from Richard Titmuss's *The Gift Relationship*, on the moral relations implicit in blood donations, the study of ethical judgement in action has always been neglected in Britain. It is as if British sociology believed that the decisive habits of the heart were set by class, not by character. In America the royal road of the sociolo-

gical tradition runs from Tocqueville's *Democracy in America*, to the 1940s *Middletown*, to David Riesman's *The Lonely Crowd*. In this line of sociological descent, the key question has been the impact of mass democracy, equality and individualism upon civic character.

It is to this tradition that Bellah and his co-authors belong. The authors have interviewed middle-class Americans about the tacit moral premises which order their private life and which connect them, if at all, to the larger community. Their interviews confirm Tocqueville's fear that a society premised on individual freedom risks destroying the shared social world which makes individual freedom meaningful. Individual Americans, they argue, seem unable to refer to a shared moral world when making their commitments to each other. When asked to justify their choices, they make "invested" reference to their "values", but these on examination turn out simply to be strong preferences or desires.

When the young Silicon Valley executive who regards life as a pinball game is asked why he remains with his wife, he evokes "values" which turn out to be nothing more than the mysterious fact that he likes his wife and wants to stay with her. The idea that he "ought" to do so, that there is some social, moral or theological good to be served in so doing cannot enter into his calculus because there is no community "out there" to whom he feels obliged to justify his choices. Such "expressive utilitarianism" as the

authors term it, works well as long as private desires are not in conflict - as long as husband and wife get along. But as soon as preferences and desires are in conflict, the only arbiter of moral choice is "doing what you feel". Individualism makes for a lot of divorce, and the authors add, with some puzzlement by Americans about the emptiness of the freedom they have pursued at the price of other people's desires.

Much of this might have been anticipated by Tocqueville. What does seem to be new on the American scene is the immense influence of both managerial and therapeutic morality in the making of the American character. Modern managers, so they argue, are office politicians whose success depends on the finesse of their dealings with others. Their style is more promissory than the farmers and merchants of Tocqueville's day. Yet their congenial and permissive ethos cannot conceal the extent to which their displays of friendship, charm, kindness or decency are directed towards company goals of success and profit. This moral instrumentalism is in conflict with the expressive moral attitudes supposed to be encouraged by a wholehearted belief in the free market. Faced with behaving as instrumentalists to their family as they do to their employees, the authors also argue, Freudianism has drastically reinforced the pathological sides of American individualism. The therapeutic culture may have liberated the ascetic, self-denying organization men of the fifties from the

heavy hand of a secularized Calvinism, yet the new culture of expressive utilitarianism emphasizes self-actualization to the exclusion of any sense of social or collective responsibility.

Bellah *et al* should be situated at the liberal centre of a debate about American culture which has Daniel Bell and Philip Rieff on the conservative side, and Christopher Lasch, Russell Jacoby and others on the left. Against Bell and Rieff, Bellah *et al* of doubt that anything so basic as a return to fundamental moral values will halt the slide of individualism into licence. Against Lasch, they argue - and this I take to be the central merit of their book - that ordinary people do manage to live coherent moral lives even when they are unable to find coherent moral language to explain their choices. This perception - that people live better lives than they are able to explain - gives the book from one-dimensional pessimism about American narcissistic individualism.

Despite their differences, all three sides of this debate about America seem to want to revive the spirit of civic conscience in America, but no one seems to know how. All seem at a loss in the face of the tidal wave of change which Tocqueville was the first to discern. Bellah and his co-authors end with a peroration about rediscovering a sense of citizenship based on recognition of mutual dependence on something they call "the social ecology". Americans would pull together, might even rebuild a shared moral world, they argue, if they could fully under-

stand that their private freedom depends on a social system which is as frail and finite as the natural world. The insistence of the authors on a fundamental change in American "habits of the heart" is a sobering corrective to those who suppose that more social justice and better government regulation of the market would suffice to make America a better place. Yet "habits of the heart" are notoriously recalcitrant in the face of reformist good intentions as economic systems and government regulations. It may be true, as the authors say, that American society needs a public philosophy - a forum for debate on the pathologies of American individualism - but whether it wants one is another matter. As long as there are politicians who can climb the slippery pole of office by pandering Americans to "feel good about themselves", as the current incumbent of the White House has so successfully demonstrated, citizens are likely to choose soporifics in preference to a public philosophy of arduous civic duty. Things will have to get worse before they get better: only when a majority of the American electorate awakes from its politically induced slumber of self-approval is the authors' stringent call for self-discipline and social duty likely to get a hearing.

Michael Ignatieff

Michael Ignatieff's latest book is "The Needs of Strangers".

America's legal disease

The Trouble with America: why the system is breaking down by Michel Crozier
translated by Peter Hefau
University of California Press, £17.75
ISBN 0520049780

It was that most distinguished of French sociologists of an earlier generation, Emile Durkheim, who popularized the notion that societies could be objectively diagnosed as suffering from a pathological condition. A large part of his method for making such a diagnosis entailed drawing a contrast with past periods of relative normality and with a rationally constructed model of a potential normal state. His distinguished successor, Michel Crozier, joins the swelling ranks of the social diagnosticians with this revised and up-dated English version of his *Le mal américain* (which followed on the heels of Alain Peyrefitte's *Le mal français*).

For a time it was fashionable in France to talk about the "French disease", which was thought to be the consequence of that society's deep attachment to centralized bureaucracy. Crozier suggests that, by the same standards, one could talk now of the "American disease", referring to the curse Americans cannot get rid of

because of their fanatical commitment to the formalism of due process. However, he then seems to qualify this statement by admitting that, although this way of speaking may be useful as a shock to awaken people from their complacency, there is no such thing as a "French disease" or an "American disease" - every culture has several ways of solving or evading problems, and this diversity is not just functional, but indispensable.

Nevertheless, he wishes to assert that there is a sense in which it is worthwhile to speak of an American disease, and that it refers to a phase in the spiral of development in which the system fails to adapt. He believes that America has entered such a downward spiral and that it is not just a crisis of the economy, politics or values, but a crisis of the American way of life and ultimately a crisis in the American mind.

If, for argument's sake, we allow that America has deep troubles, if not a disease, we can go on to consider the reasons Crozier gives for believing that the system is breaking down: the problem, as he sees it, lies in those core elements of the system that were once the bases of its strength: the due-process legal system, the mass production / mass consumption market, the management model of rationality, and the fostering of unlimited expectations (another echo of Durkheim). Not all of these receive equal treatment, indeed what is most interesting for a British reader is to see which aspect of American life strikes a French observer as most pathological (bearing in mind that Crozier is no ordinary Frenchman, but rather an intellectual with some first-hand knowledge of

America). It is the "vicious circle" of procedure and due-process legalism that is diagnosed as the source of the most grave pathological results. This is significant because Crozier made his name by studying French bureaucracy and he recounts how he fell in love with America at an early age when he was struck by the sharp contrast between the freedom that seemed to reign there and the stifling French bureaucracy. It was only after many years and repeated visits to America that he discovered it too had vicious circles.

Returning to teach at Harvard in 1960 after a 10-year absence, he was still reluctant to doubt that the American system as a whole was a good thing. According to his own confession, it was the Harvard students who insisted on showing him that their country's system was just as "messed up" as his own. Whereas the French had problems of centralization and the abstract deductive reasoning that goes with it, he was led to the discovery that America's vicious circles grow out of juridical freedom and the accompanying passion for process. If public order was not to be found in hierarchy another way had to be found to regulate social intercourse. In the American system, constant recourse to court decisions led to the vicious circles of short-term considerations constantly winning out, along with sectional interests, and the proliferation of regulations and legal processes (not to mention the growth in the number of lawyers - eight times as many lawyers per capita as there are in France and 20 times as many as in Japan). Crozier maintains that this rage for procedure is dysfunctional in a world as complex as ours and that, despite appearances, America is not ruled by the new rationality of cost / benefit analysis but by the traditional rationality of jurists. For him, this seems to be the most significant symptom of "the trouble with America".

The trouble with this diagnosis is not that it is only partly accurate, but that it is mainly based on hearsay - conversations with students and the intellectual elite, impressions gleaned from the mass media, general commentaries on various aspects of American life, and even more sweeping generalizations on such as those of Solzhenitsyn. What a contrast this is to the picture Crozier paints of his first visit to America in 1947 when he travelled through working-class America, conducting several hundred interviews with rank-and-file union members and organizers. If he had continued to follow the advice of his first American mentor, the veteran union lawyer who told him to get out and stay among the people, would he, one wonders, have still prescribed the same treatment for America's ills - leadership from the intellectual elite?

Kenneth Thompson

Kenneth Thompson is reader in sociology at the Open University.

History repeating itself

The Great Depression 1929-1938: lessons for the 1980s by Christian Saint-Etienne
Hoover Institution Press, \$5.95
ISBN 0817979824

Though not all economists and economic historians will readily agree with Christian Saint-Etienne's interpretation of the sequence of events leading into the depressions of the 1930s and 1980s, this volume provides a salutary warning to those who choose to ignore the lessons of the past. There are notable differences in detail between the two periods, but the broad similarities are too strong for comfort. According to the author, a new and devastating great depression cannot be ruled out since the international economy is no less vulnerable to shocks than it was in the later 1920s. "Overall, comparing structures, institutions, and business cycles, the international economy does not appear much more stable or sound in 1980-1983 than it was in 1925-1928."

The most disturbing feature is the international debt problem of the third world which is all too reminiscent of the debt burden of the periphery in the later 1920s. The less developed countries, many of which are non-oil exporters, have been allowed to run up massive debts in the past decade or so, the servicing costs of which are eating into export earnings largely because the borrowings have not been used to generate sufficient new exchange earnings. The position is particularly acute in some of the Latin American countries, as it was in the 1920s, whereas the Pacific basin has managed to utilize its foreign capital inflow more productively. As long as western bankers and the International Monetary Fund can arrange debt rescheduling packages it is possible to maintain a precarious stability, but, as the author points out, should a trade war develop and limit the exports of the debtor countries, it could mean unmanageable debt levels. For these countries and lead to an international financial and banking crisis of even greater dimensions than that of the 1930s.

The possibilities of this happening are far from remote given the slowing down in world trade and the increasing trend towards protectionism. It would only require a significant protectionist move by one major country, as for example the United States, as for introduced the Hawley-Smoot Tariff in 1930, to spark off a new international trade war which would lead to income destruction for all concerned. Moreover, the major industrial countries may be even more disposed than

in the 1930s to take such action given that their economies are now more open than they were then and at the same time much more sensitive to competition from third world countries.

The stability of the international economy is also endangered by the slow adaptability of the western industrial nations to the momentous changes of the last decade or so. As in the 1930s, structural rigidities have deepened which have led to a slowdown in growth. Western nations have been faced with a severe structural transformation problem since the first crisis in the early 1970s, which rendered obsolete much of the energy-intensive capital stock. In turn, the increasing uncertainty and high rates of inflation reduced the incentive to invest in new equipment thereby causing capital shortage and unemployment. Restrictive policy measures and high interest rates to combat inflation served to exacerbate the problem. At the same time financial markets have been thrown into disarray by large budgetary deficits which have absorbed an increasing proportion of private savings and crowded out private investment. A further complication is that factor markets have become more rigid through excessive subsidies, transfer payments, employment protection measures and real wage resistance which tend to preserve existing production and employment structures.

In short, unless the economies of Europe and North America can adapt more rapidly to the changed conditions they are condemned to wriggle around the reduced trend rate of growth. It can be argued therefore, that growth, not employment, is the first priority to preserve the stability of the international economy and to avoid a lurch back into the protectionist era of the 1930s, which would create a great deal more unemployment than we have at present. It scarcely needs to be said that sound monetary and financial policies should be maintained while avoiding the recession-inducing policy stance of the earlier period. At the same time, western nations need to relax the regulation of their institutional framework to give more incentive to invest in new technologies and work methods, as the Japanese are doing, even though in the short term, this may create more unemployment.

Unless these objectives can be achieved, there is danger that the present recovery will peter out and thereby undermine the fragile stability of the international economy. Mr Saint-Etienne's analysis of events may be somewhat cursory at times, but the volume provides a sobering reflection on the world's current economic difficulties in the context of the historical past.

Derek Aldcroft

Derek Aldcroft is professor of economics at the University of Leicester.

BOOKS

Heidegger's challenge

On the Truth of Being: reflections on Heidegger's later philosophy by Joseph J. Kockelmans
Indiana University Press, \$24.95
ISBN 0253342457
The Question of Language in Heidegger's History of Being by Robert Bernasconi
Macmillan, £25.00
ISBN 0333375807

Nearly ten years after his death Martin Heidegger remains the most controversial and challenging figure in 20th-century philosophy. Reactions to his work have varied from the uncritically adulatory, through uncomprehending puzzlement, to the dismissal of the whole considerable corpus as mystification or nonsense. Given the difficulty of his writings, and a reputation cultivated by detractors and admirers alike that makes them sound even more difficult than they are, it is tempting to avoid them altogether; and nowhere more so than in England where not merely his style of thought, allusive, poetic and semantically complex and speculative, but the very questions he considers are foreign to our philosophical tradition.

Heidegger's obsessive concern with "the meaning of Being", and his claim, variously phrased, to destroy the history of ontology, to overcome metaphysics, to displace philosophy with thinking, are hard enough to take even for those brought up to know and respect the traditions he seems, at once, to undermine and renew. For an Englishman, heir to the common sense of Reid, the scepticism of Hume, the empiricism of Mill - a mixed inheritance but each element antimetaphysical in a sense utterly different from Heidegger's own - they are all but incomprehensible.

And yet the challenge remains; and, as each year brings new translations and commentaries, it becomes more and more difficult to avoid what George Steiner has called "the presence of Heidegger". This is not merely a matter of the influence of the man on contemporary European culture, and on the development of such disciplines as theology and literary theory. It is because, if once one begins to

read, one is struck, even in the midst of puzzlement, by the wealth of extraordinary insights the writings contain. Old, apparently extinct questions live again, and in a way that makes them seem utterly relevant to the situation in which we find ourselves as the century approaches its end.

That, of course, is just what Heidegger would have wished. For whether his stated theme is a poem of Hölderlin or Stefan George, a fragment of one or another of the pre-Socratics, the question of technology or the apparently more abstract question of "the essence of truth", his concern is always to confront the modern western reader with the reality of his fate, his place in the process of Being of which man is not the maker or creator but the witness, the participant, and especially now in the age of technology, the "shepherd" with whom the destiny of all has come to rest.

It is not necessary to accept Heidegger's diagnosis of that situation in order to be challenged by the questions

he raises - questions which, without him, might never have been posed in so radical a form. One need not fall beneath the admittedly potent spell which Heidegger's writings, and, as we know, his verbal technique, could and can exert to recognize the real, not merely linguistic, profundity of his thought. Whether right or wrong in his specific arguments and occasional answers, Heidegger presents us with genuine and, as he would say, fateful matter for consideration. If, as I think, there are ways other than his in which his questions can be pursued they must, like the ways followed by Eric Voegelin and Hans Jonas, develop from a meditation on the human condition at least as painstaking and penetrating as Heidegger's own.

Heidegger then is an important thinker, and a book like Joseph Kockelmans's *On the Truth of Being*, which takes us systematically through the succession of dense but often brief essays which succeed his most famous treatise *Being and Time*, provides an

invaluable aid in coming to terms with his work. For one of the not inconsiderable difficulties of Heidegger's thinking is the way in which closely related and even identical themes are taken up and developed in many different contexts. It is possible, though as Heidegger and his commentators would claim misleadingly, to read *Being and Time* as a philosophical work complete in itself but in his later writings there is no equivalent extended treatise to be found. The anthology, *Martin Heidegger: basic writings* (Harper and Row, 1977) goes a long way toward providing an adequate introductory selection in the field, but, beyond that, it is all but essential to be guided through the many single essays and thematically linked collections of Heidegger translations by someone who, like Kockelmans, knows the works well and can provide references. *On the Truth of Being* fully succeeds in introducing the wealth of Heidegger's later philosophy to the English speaking reader. It is a fine

theory. According to Herzog, Hobbes tries to justify state authority by a combination of two arguments, one prudential, the other more conventionally moral and appealing to the implications of moral concepts in ordinary language. The purported realism of the first argument is the empty formalism of the second. In any event the prudential argument ceases to be realistic if it is divorced from the particular historical circumstances of Hobbes's time and is turned into a timeless theorem. Locke's attempt at justification is even less convincing. His political theory depends on the notion of consent but his moral theory gives no firm or consistent reason why consent obliges.

When he turns to utilitarianism, Herzog concentrates his attention on the classical hedonistic utilitarianism of Bentham and Sidgwick, and then adds some critical comments of modern, supposedly improved, versions of the theory formulated by Harsanyi, Hare, and Brandt. His discussion in fact contains little about the political dimension of utilitarianism. He takes this to be simply the view that political policy ought to be settled by working out which course of action will produce the maximum happiness.

His criticism of utilitarianism as a general theory discounts the common objection that it leads to some immoral conclusions. Instead he argues that the theory is "intolerably sketchy". In assuming that totally different kinds of pleasure are commensurable, that pleasures and pains can be straightforwardly balanced against each other, and that a given quantity of pleasure for one person "annihilates" an equal quantity of pain for another, "the utilitarian calculus demands a staggering loss of information".

Moving on from these discredited theories to his proposed heroes, Hume, and Smith, Herzog acknowledges that

they retain something of the foundational method but urges that they also introduce the method of contextual justification. He finds it in Hume's historical rather than philosophical works and again in Smith's specific arguments for free trade rather than in his analytical theory.

There is much to commend in this book. It shows originality both in its general thesis and in parts of its historical discussion. It is also clearly written, with a minimum of technical jargon. The novel perspective is refreshing but it has its limitations. Justifying political authority is not the same sort of thing as justifying particular policies. The failure of theories offering a single justification of political authority (covenant, natural rights, utility) leaves open the possibility of justification on plural grounds.

Herzog's account of Hobbes's non-prudential argument is too simple. The argument is not an appeal to ordinary language but an application of Hobbes's theory of the artificial as an initiation of the natural. It includes Hobbes's conception of covenant and it brings out the important political truth that a human ruler or body of rulers cannot control a state by power alone.

While Herzog's criticisms of utilitarianism as a general theory are well taken, the contribution of classical utilitarianism to political theory lies mainly in its account of the role of law. Finally, Herzog's illustrations of contextual justification hardly provide a task for political theory. They yield little more than the truism that policy in particular circumstances should be determined in the light of those circumstances.

D. D. Raphael

D. D. Raphael is emeritus professor of philosophy at Imperial College, London.

The Al-Gadid Mosque in Algiers, an illustration from André Raymond's book *The Great Arab Cities in the 16th-18th centuries* (New York University Press, \$45.50).

work of exposition and description and an important addition to the literature, but inevitably uneven body of Heidegger commentary and criticism.

Robert Bernasconi is a very different sort of book. Bernasconi is a post-Heideggerian thinker in the specific sense that he takes as real Heidegger's claim to have moved beyond or behind traditional philosophy to the elusive realm of a more fundamental mode of thinking. The typically Heideggerian theme of the concealment of truth not only in but, in a sense, by the lucid propositions of the philosophical tradition - the *lethe*, forgetfulness, which lurks, linguistically and ontologically, within *aletheia*, truth - plays a major part in Bernasconi's reading of Heidegger's own work. "Where the world is wanting no thing can be," wrote Stefan George at the end of a poem which Heidegger discusses more than once.

The inadequacy of language to keep a grip upon a truth of which it is none the less the only possible expression is a theme rich in philosophical implications, and one which Bernasconi, following Heidegger, conceives in relation to the lack of a word evoking Being in the age of technology. For what can Being now evoke but the Being of the beings that are the object of technological manipulation? And where is the Parmenidean awe or wonder in that experience of human mystery? The radicalization of Heidegger's attempt to reach behind philosophical language to the truth of man's radical finitude which those same words, once, momentarily, evoked, leads in Bernasconi, as in other writers influenced by Derrida, to an epistemological vacuum in which everything can exist except, ironically, truth itself. If this is, indeed, part of our fate, as they would claim, then for one cannot begin to imagine what it would be like to live in a world in which language was so radically divorced, and recognized to be divorced, from what it has always been supposed to express.

Bernasconi has interesting things to say on the contrast between Heidegger's historicism and the Hegelian Brand. And it says something for his capacity to lead this reader along a difficult and uncongenial path that, in spite of my misgivings about the possibility of maintaining the all-consuming scepticism Bernasconi's notion of language seems to entail, I look forward to his promised attempt to resolve some of the issues raised here in a forthcoming book of essays.

David J. Levy

David J. Levy is lecturer in sociology at Middlesex Polytechnic.

New from Chicago

Sonoran Desert Spring

JOHN ALCOCK

'Only the remnants of spring are left. All is still on the peaktop with the exception of a broken straggles of harvester ants moving toward their nest entrance to escape the fierce sun. There is no wind, only heat radiating from bleached stones. Unexpectedly a small piece of desert rises from the ground. It scuttles into the partial shade of a shrub whose blackened and leafless limbs cover a portion of the ant nest. From desert colors and desert forms a horned lizard miraculously reconstitutes itself before my eyes.'

Sonoran Desert Spring is a unique celebration of the joy of observing desert plants and animals over the course of a season, which also captures the bittersweet sadness of wild places. A journal drawn from John Alcock's studies of the Arizona desert, the book describes the attraction and fascination of a harsh and unfamiliar environment. It is natural history informed by modern evolutionary principles and guided by a genuine affection for a fragile land and its inhabitants.

Those who love the desert and those who take an interest in natural history and conservation generally will love *Sonoran Desert Spring* for the power and beauty of its descriptions and the eloquence of John Alcock's advocacy for the desert as an endangered part of the natural world.

£18.25 Hardback 196pp with 90 halftones & 6 colour plates
0-226-01258-1

THE UNIVERSITY OF CHICAGO PRESS

126 Buckingham Palace Road London SW1W 9SD

Russia

The Roots of Confrontation

ROBERT V. DANIELS (foreword by Edwin O. Reischauer)

For citizens of the United States the spectre of Soviet Russia may well be the most stressful intrusion upon their political consciousness since the Civil War, yet to most Americans Russia remains an abstraction - a menace conjured up by newspaper headlines. Robert Daniels' book provides a compact but comprehensive history of Russia in the belief that the present can only be understood on the basis of understanding the whole evolving process of the past. Russia's national character and its international relations can be understood only in the light of the traumas and triumphs, privations and privileges that the country has weathered under the tears and the Soviets. The author lays to rest the mistaken American view that Soviet behaviour results simply from the application of Marxist revolutionary ideology. This error, he shows, has led to exaggerated perceptions of the Soviet threat, the escalation of the arms race and the hardening of Soviet attitudes.

£22.75 Hardback 484pp 0-674-77865-7

HARVARD

UNIVERSITY PRESS 126 Buckingham Palace Road, London SW1W 9SD

كتاب من الأصل

**FUNDAMENTALS OF CLASSICAL THERMODYNAMICS
SI VERSION, Third Edition**

by G.J. Van Wylen, President, Hope College and R.E. Sonntag, University of Michigan
This is a revision of an internationally known, best-selling introduction to classical thermodynamics, written for undergraduate engineering students. The text material is developed from basic principles and includes a variety of modern applications. It's coverage of the more advanced topics and lays a foundation for further study and application of the various engineering disciplines.
0471 80014 7 735pp June 85 (cloth) £49.70
0471 82933 1 735pp June 85 (WIE) £13.95

**FUNDAMENTALS OF HEAT AND MASS TRANSFER,
Second Edition**

by F.P. Incropera and D.P. Dewitt, both of Purdue University
This undergraduate-level engineering text introduces the physical effects underlying heat and mass transfer phenomena and develops methodologies for solving a variety of real-world problems. The updated second edition continues to stress the importance of conservation principles, particularly the first law of thermodynamics, in heat transfer analysis, and has been expanded to encompass principles and problems in mass transfer. The book includes numerous examples and problems.
0471 88560 9 826pp April 85 (cloth) £48.20
0471 82681 1 826pp April 85 (WIE) £14.95

**INTRODUCTION TO FLUID MECHANICS,
Third Edition**

by R.W. Fox and A.T. McDonald, Purdue University
This introductory text emphasizes the physical concepts of fluid mechanics and methods of analysis, beginning from first principles. In helping readers develop a more orderly approach to problem solving, the book starts from basic equations, states all assumptions clearly, and relates results to expected physical behavior with the aid of 70% of the more than 1,100 problems, 600 of which are new.
0471 88568 3 752pp March 85 (cloth) £80.80
0471 82108 3 752pp March 85 (WIE) £18.30

INTRODUCTION TO STRUCTURES

by W.R. Spillars, Professor of Civil Engineering, Rensselaer Polytechnic Institute, Troy, New York
This is a compact coverage of all the main topics of a course on structural analysis within the compass of a single teaching text. It emphasizes two main elements throughout: (a) that all engineers must learn to live with the computer, and (b) that this requires a broader and more sophisticated base of knowledge.
Series: Ellis Horwood books in Engineering Science and Civil Engineering
085312 726 5 262pp March 85 (cloth) £18.50
085312 658 9 262pp March 85 (paper) £10.00
Published by Ellis Horwood Ltd, Chichester and marketed by John Wiley & Sons Ltd.

For further information please write to the Textbook Manager - inspection copies of certain titles are available

John Wiley & Sons Limited
Baffins Lane, Chichester, Sussex PO19 1UD, England

**Managing construction projects: A guide
to processes and procedures.**
Edited by A.D. Austen and R.H. Neale

"This guide has been tested in preliminary form at a series of ILO courses and seminars, and is one of the few books in its field to take special account of the needs of developing countries. It is essentially a practical book for practical people..." (Building Management Abstracts, U.K.)
ISBN 92-2103553-0 £10.00

**Equipment planning guides for vocational
and technical training and education
programmes**

This series of guides contain illustrated lists of equipment, model workshop layouts, common conversion factors, price lists and indexes in English, French and Spanish. Each guide: £13.95
Mechanical and fitting occupations. No. 1
Tool and die making. No. 2
Welding occupations. No. 3
Sheetmetal occupations. No. 4
Automotive. No. 5
Plumbing/Pipe fitting occupations. No. 6
Forging/Foundry/Heat treatment. No. 7
Carpentry and joinery. No. 8
Electrical occupations. No. 9
Electronics. No. 10
Radio and television repair. No. 11
Masonry. No. 12
Learning stations and layouts for workshops. No. 13A
Learning stations and layouts for laboratories and classrooms. No. 13B
Refrigeration and air conditioning. No. 14
Audio-visual, draughting, office, reproduction and other ancillary equipment supplies. No. 15
Hotel and catering. No. 16
Forestry. No. 17

INTERNATIONAL LABOUR OFFICE
Branch Office
96/98 Marsham Street
London SW1P 4LY.
Tel.: 01-828 6401

CARFAX PUBLISHING COMPANY
European Journal of Engineering Education ISSN 0304-3797
Volume 10, 1985, published quarterly from March for the European Society for Engineering Education
Institutions: £40; Individuals: £20
Cash with order. Please mention THES. Inspection copies on request.
Carfax Publishing Company, PO Box 25, Abingdon, Oxfordshire OX14 3UE, England

BOOKS
ENGINEERING

**Into the
melting
pot**

Steelmaking Before Bessemer
by K.C. Barraclough
Volume one: Blister Steel:
the birth of an industry
Metals Society, £19.95
ISBN 0904357 53 8
Volume two: Crucible Steel:
the growth of technology
Metals Society, £29.50
ISBN 0904357 64 3

These two handsome volumes, the fruits of over a quarter of a century of patient research into metallurgical history, are devoted to the development of steelmaking techniques before the age of the bulk steelmaking methods associated with the names of Henry Bessemer and Charles William Siemens. Thus, the cementation and the crucible processes constitute the major subjects of this study, but because of the involvement of alloy steel, the chronological span of this history goes far beyond the limit suggested by its overall title.

Dr Barraclough's work has been long awaited. For many years he has whetted the appetites of those fascinated by the historical development of this most important and versatile of materials with a steady stream of publications, each one of which has advanced our knowledge of the nature of steel, the materials, processes and costs involved in its production, and the scale and location of the industry and of its individual units. With the bringing together of these pieces (no less than 13 of which are cited in the excellent bibliography), the addition of supplementary evidence (much of it in 63 appendices) and superbly reproduced figures and plates, the true measure of Barraclough's achievement is revealed.

The remarkable clarity of the text reflects the depth of the author's expertise. A lifetime spent in the industry—as an analytical chemist and, from 1959, works manager in charge of the manufacture of special steels for Fifth Brown—invests this technological history with a profound understanding which the reader is able not only to appreciate but, more important, to share. Following a lucid discussion of the chemistry of steel, its physical properties and its various methods of manufacture, the first volume is devoted to the cementation process. Although its origins were continental, this process attained its fullest development in Britain. Essentially, cementation involved packing high-quality bar iron and powdered charcoal into airtight sandstone chests which were subjected to prolonged heat from burning coal in a furnace characterized by a reverberatory hearth and a conical chimney. During the course of each campaign, some 6 to 20 tons of iron (depending on the capacity and number of the chests) were converted into steel by the diffusion of carbon into the iron bars which, when retrieved from cooled chests, usually appeared blistered. This blister steel was of no direct use; to make it so involved forging. Barraclough emphasizes the indispensability of Swedish or Russian bar iron for successful conversion. The British, with little concern for the principles involved, made high-quality blister steel from iron brought largely from the Dannemora forge in Sweden, having discovered the theory, were woefully unsuccessful in operating the process until the mid-19th century, for, despite the advice of Gabriel Jars (1765), they insisted on trying to convert iron manufactured from their own indigenous ores. More surprisingly, for a number of years even the Americans subordinated practical realities to the quest for domestic self-sufficiency.

By the mid-19th century perhaps 50 to 70 per cent of the blister steel produced in Britain was being melted down in crucibles placed in furnaces fired by coke, the liquid steel being

poured into moulds to produce ingots weighing up to 70 pounds. The second volume of Barraclough's study is devoted to the discovery of the crucible process by Benjamin Huntsman shortly before 1740, its geographical distribution throughout the world, and its subsequent importance as an essential stage in the manufacture of alloy steels. Barraclough convincingly argues that Huntsman "laid the foundations on which all ingot-making steel-making processes are based". Indeed, "all steel required for any onerous application throughout the nineteenth century, and well into twentieth, was made by his process and the bulk of it in Sheffield". Perhaps fully one half of the five million tons of crucible steel made over the 200-year period for which the process was used was made in the Sheffield area with a similar amount being produced elsewhere, mainly in the United States, Germany and France.

The process is fully described and explained. It is apparent that the size and composition of the crucible itself was critical. It is equally plain that the development of coke as a metallurgical fuel was a prerequisite for the technique, since only by the use of this fuel, with a plentiful air supply, could the necessary temperature (1,600°C) be maintained for a sufficient period to enable steel to be melted. Not until about 1865 was coke partially displaced by gas-fired regenerative Siemens furnaces and latterly by the high-frequency coreless induction furnace, and not until about 1855 was the charge of blister steel substantially altered—hence, the continued British



Henry Bessemer.

**Under
ground**

Buried Structures:
static and dynamic strength
by P.S. Bulson
Chapman & Hall, £25.00
ISBN 0 412 21560 8

Although this book is the latest in a series intended to bring to the attention of the practising engineer the results of those advances in computational methods and basic understanding which are enabling some intractable problems to be dealt with "rule of thumb" and experience, its title is misleading, in that only a small portion of the field implied by it is really covered. The disparity, however, is explained in the introduction: the scope is limited to the analysis and design of shallow buried services and bombshelters.

In Britain we are facing a substantial task in renewing our urban services, and in this respect, it is pleasing to note that defence research could have an impact on the reconstruction of our sewers. The special value of this book, therefore, is the access it affords to many relatively inaccessible technical reports produced by or on behalf of the defence authorities in the United States and Britain. Indeed, the results of extensive and diverse studies are well summarized with useful comments. It is a little surprising, however, that Soviet, Swedish, German and French sources are not used, particularly in view of the historical pre-eminence of the French in these matters.

After the introduction, a chapter on general principles restates classical continuum soil mechanics and the results of a number of linear elastic stress analyses of holes of various shapes in isotropic homogeneous elastic media. The chapter also gives some guidance on the static and dynamic soil parameters appropriate to the empirical expressions used. The military back-

ground to much of the experimental work quoted in this section is evident, in that the general properties of soils under sustained cyclic dynamic loading are not treated: it is a case of surviving or big bang.

Two chapters on thick-walled and thin-walled pipes under static load draw heavily on the results of physical model and full-scale trials. The results of numerical modelling are discussed and there is brief reference to the powerful centrifuge techniques which are increasingly being recognized as having much to offer in the field of soil dynamics. The chapter on thin-walled pipes under static load concludes with a pertinent review of the design rules proposed by a number of agencies. Non-circular pipes, closed cylinders and shells (thick and thin) are dealt with in chapters five, again with copious reference to model trials. Chapter six, on structures under dynamic loading, also draws on the results of full-scale tests and gives some design rules for domestic nuclear shelters which should appeal to "do-it-yourself" enthusiasts. The effects of sustained cyclic loading (vibration) on soils or services buried in them, a cause of concern to engineers called on to maintain our infrastructure under the assaults of ever heavier and more energetic loads, is an aspect of dynamic loading not dealt with. The final chapter deals briefly with loads, strength and safety. Analysis and design for buried services, however, is rather like the related field of pavement studies for motorways: although the rational basis of design has long been recognized, many engineers keep on extrapolating old formulae the consequences of which are not at all good.

Professor Bulson has written a book which will be of service to those engineers who are prepared to look a little beyond the formulae in their codes of practice. The numerous practical consequences of the research quoted enhance the value of the work.

Bryan Skipp

Bryan Skipp is a consultant engineer with Soil Mechanics Ltd, Bracknell, Berkshire.

BOOKS
ENGINEERING

**A closer
look at
materials**

Optical Microscopy of Materials
by R. Haynes
International Textbook Company:
Blackie, £14.95 and £6.95
ISBN 0 7012 0287 0 and 0286 2

Metallurgy: principles and practice
by George F. Vander Voort
McGraw-Hill, £36.95
ISBN 0 07 066970 8

Essential Metallurgy for Engineers
by W.O. Alexander, G.J. Davies,
S. Heslop, K.A. Reynolds,
V.N. Whittaker and E.J. Bradbury
Van Nostrand Reinhold, £7.50
ISBN 0 442 30624 5

The subject which used to be called metallurgy is now largely taught, in this country and the United States, as a major component of courses entitled materials science or materials engineering. This change in emphasis reflects the fact that nowadays materials are but one among many classes of materials which we exploit for their particular mechanical, physical and chemical properties. Materials science is thus taught as a discipline in its own right and as an important element of all engineering courses. Indeed, one of the major recommendations of the "materials" committee was that the "materials" context of most engineering courses should be enhanced. The need not apologise. It is difficult not to believe that these two volumes will constitute the standard work on steel-making before (and in some respects after) Bessemer for as long as one dare look into the future.

Peter L. Payne

Peter L. Payne is professor of economic history at the University of Aberdeen.

The scientific basis of the behaviour and properties of "materials" has been established during the past 100 years. The most fruitful approach has been to interpret large-scale (macroscopic) behaviour in terms of the underlying much smaller scale microstructure. Although this approach was first adopted for metals and alloys, during the past two decades it has been increasingly applied to polymeric, glassy and ceramic materials. More recently, there has been an upsurge of interest in man-made composite materials, of which the most widely studied are perhaps fibre composites, in which strong fibres (for example, glass or carbon fibres finer than a human hair) are incorporated into a plastic matrix. Materials of all types are commonly

very heterogeneous on a fine scale: indeed, it is the nature and distribution of the different phases which control properties such as strength, corrosion resistance and electrical conductivity. To take a few examples on a variety of different size scales, the strength of brittle ceramic materials is limited by the size of the cracks they inevitably contain; the ductility of alloys may depend on the shape of particles whose size is less than a thousandth of a millimetre (a micrometre); the electrical conductivity of copper is substantially reduced if a small amount of impurity is dissolved in it, whereas the conductivity of silicon is greatly increased by such doping; aluminium soft drink and beer cans rapidly develop leaks unless the sheet metal is free of foreign particles whose size is again measured in micrometres. None of these defects is visible to the naked eye.

The most important tools to a materials scientist are therefore those which enable him (or her)—although there are deplorably few women in the subject—to study microstructure. The most significant of these tools are microscopes, useful instruments ranging from the hand lens, through light and electron microscopes, to sophisticated devices costing hundreds of thousands of pounds which are capable of resolving individual atoms. Although similar techniques are used to investigate all types of materials, the study of microstructure is traditionally called metallurgy. As such, it forms a substantial proportion of all undergraduate courses in materials science.

Optical Microscopy of Materials is a short book aimed at undergraduate materials scientists. It explains, quite concisely, the major qualitative and quantitative techniques of light microscopy, although the student would need to look elsewhere for detailed guidance on specimen preparation. The author has tried to balance the inevitable metallurgical emphasis with examples drawn from ceramic and polymer systems. A major deficiency, however, is the paucity of actual micrographs: although the diagrams are both profuse and clear, it is not possible to illustrate the range of topics covered using only seven pictures. None the less, this is a useful text, written in a style which should not daunt the typical undergraduate in a materials science department.

The author of Metallurgy: principles and practice clearly hopes that this text will become the standard reference handbook for optical microscopy in materials science. Indeed, there are many good features which point in this direction: most topics are liberally illustrated and a dozen or so of the 150 micrographs are in colour, which is relatively uncommon but well worthwhile both for visual impact and scientific content. The text covers macroscopic as well as microscopic examination and actually contains more subject-matter on light microscopy itself than the whole book by

Haynes. As you would expect in a handbook, specimen preparation is treated very seriously, and the appendices—listing polishing and etching solutions and techniques—occupy more than 200 pages. There is a substantial chapter on hardness measurement, which is always closely related to optical microscopy.

It is a pity, though not surprising, that the description of equipment is rather biased towards American manufacturers and some of the illustrations appear somewhat dated. This does, however, make for a degree of familiarity—many of us regularly work with such museum pieces. A more serious deficiency is that there is a little discussion of non-metallic materials. Although the words "polymer", "ceramic", "composite" and "mineral" appear in the index, the treatment of these materials is rather scant. This is a great shame, since these non-metallic materials tend to be difficult to prepare and examine, precisely for the same reason that they are useful: they are composed of regions with very different properties. There is still a need for a handbook on the optical examination of non-metals, although many laboratories will want to have Vander Voort's book on the shelves of their metallurgy section.

Although neither of the microscopy books is aimed specifically at engineers, Essential Metallurgy for Engineers clearly is. Here, the emphasis is very much on metals for structural applications. The author's approach, however, is much broader than would be found in a single text aimed at materials scientists: there are sections on engineering design, quality assurance, and economics.

The book suffers from a number of major weaknesses: there is no consideration of non-metallic materials; the quality and relevance of the all-important micrographs is appalling; and there is very little guidance on further reading. It is difficult to persuade our engineering students to buy more than one book on materials. There are many others that would be of more lasting use to them.

Peter Goodhew

Peter Goodhew is reader in the department of materials science and engineering at the University of Surrey.

A third edition of J.C. Anderson, K.D. Leaver, R.D. Rawlings and J.M. Alexander's Materials Science has been published by Van Nostrand Reinhold at £18.75 and £9.75. A chapter on ceramics and composites has been added.

A second edition of P.P. Acamley's Stepping Motors: a guide to modern theory and practice has been published by Peter Peregrinus on behalf of the Institution of Electrical Engineers at £7.50.

Books from the



Process dynamics estimation and control
A Johnson
A systematically presented approach to the design and tuning of controllers—in the modern context microprocessors or computers—for chemical, oil and biotechnological (e.g. fermentation, waste water treatment) processes. This introductory text treats those processes—the majority—where there are neither significant nonlinear effects, nor interaction between the process variables.
188pp., 229 x 148mm, casebound
ISBN 0 85341 032 4, 1985
IEE Control Engineering Series number 27
UK £19.50, elsewhere £23.50

Measurement and instrumentation for control
M.G. Mylroil and G. Calvert
Intended as an introductory text to measurement and control, the book will cover the following topics: electromagnetic flowmeters, orifice plate flow measurement, other flow measuring devices, two phase flow measurement, modelling of force weight systems, temperature measurement, impedance, analytical instruments I and II.
206pp., 229 x 148mm, casebound
ISBN 0 85341 024 3, 1984
IEE Control Engineering Series number 26
UK £17.00, elsewhere £20.00

Advances in radar techniques
J. Clarke (Ed.)
This volume collects together the outstanding papers published on radar technology. Equipment capability in this field has been advancing rapidly and radar engineers will use this book to help to keep abreast of developments in the field.
530pp., 297 x 210mm, soft covers
ISBN 0 85341 021 9, 1985
IEE Electromagnetic Waves Series number 20
UK £28.00, elsewhere £38.00

Principles and practice of multi-frequency telegraphy
J.D. Ralph
The author, who has been working for many years in developing the Plesio models, has produced a clear and complete exposition of MFSK principles together with the wider applications of MFSK-1 such as would be useful in a more general context.
218pp., 229 x 148mm, casebound
ISBN 0 85341 022 7, 1985
IEE Telecommunications Series number 11
UK £25.00, elsewhere £32.00

**Second Edition
SOFTWARE ENGINEERING**
I. Sommerville
The second edition of this widely acclaimed introduction to software engineering techniques has been extensively revised to include important new developments in the field. The text part, based on the software life cycle, covers requirements definition, software specification, software design, implementation, testing and documentation. Part Two covers the human aspects of software engineering: the user interface, management psychology and practical software management.
1985 346pp/illustrations 201 14229 5/128 55 paper

**INTRODUCTION TO DATA COMMUNICATIONS
AND COMPUTER NETWORKS**
F. Halsall
A comprehensive introduction to the hardware and software of data communications, with particular emphasis on distributed systems. This text will be suitable for undergraduate courses in data communications, computer communications, networks, and distributed systems, and a valuable guide for professionals in engineering and computing who need new information on developments in data communication.
August 1985 264pp/illustrations 021 14546 8/128 65 paper

MICROCOMPUTERS IN ENGINEERING AND SCIENCE
J.F. Crane and G.R. Martin
This is a detailed, yet concise, treatment of the practical use of microcomputers in engineering products, instrumentation and control systems. The coverage of microprocessor types is kept deliberately general, ensuring the book's applicability to a wide range of current and future microelectronic devices. It will be suitable as a text for applications courses in all engineering and scientific disciplines, as well as for processing engineers and scientists.
August 1985 264pp/illustrations 021 14546 8/128 65 paper

VLSI SIGNAL PROCESSING: A Bit-Serial Approach
D. Denyer and D. Henshaw
This book is a valuable and unique insight into the state of the art in signal processing and VLSI design. The authors present a design methodology and a supporting silicon compiler that together constitute a unified approach to VLSI design for signal processing applications. The efficacy of the approach is illustrated by case studies by Richard Lyon, Carver Mead and John Watkinson, Malcolm Rutter and Stewart Smith.
September 1985 320pp/illustrations 021 14484 2/128 40 hard
Should you require further information on any of the above titles or wish to place an order, please contact Addison-Wesley near the date of publication.

**Addison-Wesley Publishers Limited,
Finchampstead Road, Wokingham,
Berkshire RG11 2NZ.
Telephone: (0734) 794000**

W. W. Norton & Company Ltd.
37 Great Russell Street, London WC1B 3NU

PHYSICS Hans Ohanian
This is an entirely new textbook for the introductory physics course. It presents a clear modern approach to classical physics with the emphasis on real-life rather than imaginary problems. Suitable for both physics and engineering students, essential quotations are highlighted and each chapter has a summary of its major points. Available in a one-volume edition or in two separate volumes. Volume 1 covers mechanics, Volume 2, electricity and magnetism. Physics is accompanied by a Study Guide and a Solutions Manual which has been independently tested by lecturers.

With 1,500 diagrams and 400 photographs
0 393 95401 3 One vol edition 1,000pp £15.95
0 393 95404 8 Vol 1 500pp £11.95
0 393 95407 2 Vol 2 500pp £11.95

Just published. Inspection copies are available on request.

**ORDERS WITH
REMITTANCES TO:
Institution of Electrical Engineers
(Dept. TE6)
PO Box 26
HITCHIN, Herts. SG5 1SA**

Note: A package and handling charge of £1.50 per volume (maximum £6.00) will be added to all orders which are not prepaid.

For further information and a copy of our 1985 publications catalogue please contact:
Book Publishing Dept. (TE6)
Institution of Electrical Engineers
PO Box 8, Southgate House,
Stevenage, Herts. SG1 1HQ

BOOKS

ENGINEERING

Imperial College

A Hundred Years of Civil Engineering at South Kensington: the origins and history of the department of civil engineering at Imperial College, 1884-1984, compiled and edited by Joyce Brown, Civil Engineering Department, Imperial College, London, £15.00 ISBN 0 05 247 150 3

By a tragic coincidence, the head of the department of civil engineering here described, Professor John Munro, died suddenly on the day before the Prime Minister visited the engineering exhibition mounted to celebrate the centenary of the establishment of the Central Institution of the City and Guilds of London Institute. The editor of the centenary history, Miss Joyce Brown, acknowledges his inspiration; and to a reader familiar with the department for four decades, the book is an apt memorial to Professor Munro's role as a link in a continuous chain of brilliant and innovative academics.

Joyce Brown and her specialist colleagues have produced a readable account of the department's history and one which is bound to fascinate all past members carefully listed in the appendix. It has been argued that the science and art of civil engineering is in greater need of modernization than those of the other branches of engineering, and all civil engineers will recognize the many and varied contributions made by the department's staff and research students to that development and to its dissemination. In 1893 the Central Institution became the Central Technical College

which, seven years later, became a school of the University of London. Then, in 1907, the desire of an influential group headed by R. H. (later Viscount) Haldane to establish a leading institution where the highest specialized instruction should be given and where the fullest equipment for the most advanced training and research should be provided in various branches of science, especially in its applications to industry... led to the establishment of the Imperial College of Science and Technology as a combination of the Central Technical College, renamed the City and Guilds (Engineering) College, with the Royal College of Science and the Royal School of Mines. It took over 20 years for the plans of the founders to be put into practice and for the number of students on postgraduate courses and in research to equal that of undergraduates.

The first professor to be appointed, W. C. Unwin, was one of the most distinguished civil and mechanical engineers of his day, whose teaching and research spanned the whole range of the strength and properties of materials, hydraulics and machine design and who was consulted on most important engineering works then in progress in the empire. His successor as professor of civil and mechanical engineering was W. E. Dalby, predominantly a specialist in the dynamics of machines and in the thermodynamics of steam and internal-combustion engines and later an important contributor to the measurement of the properties of steel and to its interpretation. In 1913, the department of civil engineering and surveying became independent. Its head until 1933 was S. M. Dixon, the first university-educated professor (Unwin and Dalby had started their careers as engineering apprentices) and, after building up new departments in New Brunswick, Nova Scotia and Birmingham, clearly a specialist in administration. In 1933, A. J. S. Pippard succeeded Dixon and introduced a clear awareness of the academic and professional approaches to science, technology and engineering. During the past half-century, full recognition has been given to the separateness of specializa-



A hydraulic robot moving a hot billet in a forging operation, from *A Manager's Guide to Industrial Robots* by Ken Susnjara (Prentice-Hall, £9.65).

tions, and the department's research and advanced teaching have been conducted in sections, principal among which are structures, hydraulics, surveying, highway engineering and transport, concrete technology, soil mechanics, engineering seismology, public health engineering, hydrology and the last two now combined in public health and water-resource engineering, timber engineering, civil-engineering systems and mechanics, and environmental studies. Pippard attracted C. M. White who, as professor of fluid mechanics and hydraulic engineering, generated a continuous flow of advanced ideas on mechanics and its applications; A. L. Baker, whose influence on designers and builders of reinforced-concrete structures permeates much of British industry; A. W. Skempton (later head of the department) who in Britain established soil mechanics as an independent discipline and concurrently made a great contribution to the history of engineering; and S. R. Sparks, who found industrial sponsors for a large

and fruitful team of applied researchers. From 1957 onwards, during Skempton's headship, two professors were appointed who had greatly distinguished themselves in their professional careers, Sir Colin Buchanan and Sir Alan Harris, and simultaneously five professors with distinguished research records. One of these latter, B. G. Neal, succeeded Skempton as head in 1976 and brought about a modernization of the taught courses (in the direction of design and computer analysis) and the establishment, in cooperation with University College, of the great London Centre for Marine Technology. Five more professors were created between 1976 and 1982, when John Munro succeeded Neal as head. Despite great financial difficulties, it has since been possible to fill two vacant chairs.

Here then is a story of a department well founded, guided by self-reliant, energetic and enterprising men with a gift for encouragement of their colleagues and successors, and developed

in close cooperation with professional practitioners and allied scientists. Its members are proud to consider themselves an elite and are determined to adapt themselves to changing circumstances, so that it remains a recognized centre of excellence.

Although the story has been written for the pleasure of past and present members of the department, the book contains enough philosophical, educational and statistical detail to make it worth studying in other departments of civil engineering and, at this time of prolonged grave recession in civil engineering, in the sciences and council of other colleges, polytechnics and universities.

P. O. Wolf

P. O. Wolf was professor and head of the department of civil engineering at the City University from 1966-82. He is now emeritus professor and a consultant.

Structural analysis

Introduction to Structures by W. R. Spiller
Ellis Horwood: Wiley, £18.50 and £10.00
ISBN 0 85312 725 5 and 558 9

Our college library contains over 120 texts on the subject of structural analysis. An outsider to the discipline of structural engineering, of which structural analysis is its major theoretical, and consequently, academic component, might imagine from this abundance of texts that the subject is either extremely complex or open to a wide variety of opinion. Neither is the case.

The subject is based on two profound and well-understood theorems: the first, statical equilibrium, was presented by Isaac Newton in the 17th century; and the second, elasticity, is generally ascribed to Charles Coulomb in the middle of the 18th century. Although there have since been some dramatic developments such as plastic analysis, this too is still based on these two theorems. Structural analysis remains the business of applying those theorems in a number of ingenious ways to determine the unknown forces in a structure. Nor is there any great variety in the presentation of analytical techniques. All but a small number of textbooks develop identical analytical techniques and in many cases explain the application of the techniques with similar examples. What then is the impetus for the regular appearance of textbooks on this subject? Professor Spiller gives us a clue: "In practical terms the only way this [developing engineering judgement] can be done is through developing an understanding of its structure". He concludes that "The curious part is that this understanding is developed through performing analysis and this is one of the facets of this text".

Although the author has stated the problem clearly enough, his conclusion is less satisfactory. Regrettably, there is good reason to believe that Professor Spiller is misguided. Tests on students and graduates show that they do not develop an understanding of behaviour through performing analyses. Practice in numerical solutions is important but in itself insufficient for the development of an understanding of behaviour. There are a number of reasons for this, the most obvious being that analytical techniques very rapidly become a sequence of numerical operations to the student, the solution to which requires little real understanding.

Another justification for this text is offered - the computer, which is now used extensively by the structural engineer. Thus, as even the most modest machine will carry out the majority of the analysis included in this text, we should expect its author to show how this subject is taught in that light. Professor Spiller, however, fails to give an example of the way in which the computer will shift the academic perspective.

The book is titled an introduction; and most topics are dealt with rather briefly. The coverage of the one topic the reader might have expected to reflect the author's concern over the impact of the computer, the displacement method (or stiffness) does not, for example, explain that the method forms the basis of computer programs for analysis. However, the book is better in parts than some other texts - for example, there is a useful discussion of structural modelling. But British students would prefer metric units; and one important convention, the bending moment diagram, is the reverse of that generally used here.

Pier Luigi Nervi, one of the giants of structural engineering in the 20th century, has expressed a deep concern over the inadequacy of students' understanding of structural analysis. The preface given to mathematics persuades the young student that there is limitless potency in theoretical calculations and gives him a blind faith in their

results. Neither the students nor teachers try to understand and feel intuitively the physical reality of the structure.

That was written before the general availability of the computer, an innovation that will severely restrict the opportunity for young engineers to practice these skills in his period of postgraduate training. Consequently, this view is an even more significant warning to today's academic. *Introduction to Structures* gives us little guidance as to how we should proceed.

David Brohn

David Brohn is principal lecturer in structural engineering at Bristol Polytechnic.



Prepared by the Open University MST322 Course Team, this course seeks to:

- extend the student's knowledge of differential equations
- introduce the theory of partial differential equations
- give a good working knowledge of the basic models in fluid mechanics
- apply the methods taught to actual fluid flow problems.

Course contents:
14 study units at £4.95 each
3 audiocassettes at £5.00 + VAT ea.
For further details contact OUEE Ltd.

OUEE Ltd.
12 Colford Road, Stony Stratford,
Milton Keynes, MK11 1BY, England.
Tel: Milton Keynes (0908) 588744
Telex: 826147

BOOKS

ENGINEERING

Industrial control

Applied Digital Control: theory, design and implementation by J. R. Leigh
Prentice-Hall, £26.95 and £12.95
ISBN 0 13 040189 7 and 040171 4

Until the early 1970s, newly installed process-control systems in industrial plants were largely analogue in type. The basic computing element was an electronic amplifier to which was connected a variety of RC networks (capacitors and variable resistors) for tuning each controller to the dynamics of that plant under its immediate control. The controller would solve the differential equations (or model) of the plant component to determine the input necessary to produce the desired output from that component. Large batteries of controllers would be needed for the control of an entire plant and the "intelligence" of such a system derived from the sheer number of assembled control functions rather than from the complexity of any one function (or from the interconnection of functions, little of which was then attempted).

With the arrival of the online digital computer, it seemed that the multiple control functions could be concentrated within a single module and control calculations executed in a cleaner, more reliable fashion, with all the side-benefits of adaptability, user-friendliness, data-logging, and so on. An important problem arises, however, in that the single digital processor must now handle, in rapid repeated sequence, calculations that had been performed continuously and simul-

aneously, so introducing delay in the execution of each control function. Furthermore, this "sampling" delay increases the error in the computation of control loops per computer. It is this problem of sampling with which the first five chapters of Professor Leigh's book is largely, and rightly, concerned.

After a brief introduction to the microcomputer in chapter one, the drastic effects of sampling a continuously well brought out in chapter two, together with possibilities for partial reconstruction of the signal within the computer program. The implications of sampling are presented in terms of plant control rather than merely the normal communications viewpoint, so leading naturally into chapters three and four on the discrete systems (systems which, like digital control systems, work in sampled data). Here, the author assumes the reader's familiarity with the analysis of "continuous" (analogue) systems and, to a large extent, with their design. He omits also much in the way of supporting mathematical proof (based on the theory of functions of complex variables). Except as an interesting review of applications, then, the book is not for the newcomer to control, but for those who have excluded material are well chosen. The z-transform method underpinning these chapters, though well known, is full of pitfalls for those not fully appreciating its theoretical foundations. Here, the author has devoted much effort to help the reader avoid such errors by using many more worked examples than the token few to be found in most texts combining continuous and discrete system coverage. In this respect, therefore, it is a pity that answers to readers' examples are not provided.

A nice feature, well brought out, is the difference between design and mere analysis. Analysis is predicting the behaviour of a system disturbed in some way. Design is predicting how to disturb a system by a controller to make it behave in a desired way, and thus guessing a suitable controller and stimulating the appetite for more.

The book is therefore largely self-contained and includes sections on digital logic, the microprocessor, and a design study of a maximum-minimum thermometer. It is aimed at those beginning work on microprocessors in higher national certificate, higher national diploma and degree courses. Achievement of a reasonable length, a readable informal style, and a clear presentation of concepts, all demand concentration on one microprocessor. The choice of the Motorola 6802 is logical, as the 6802 requires fewer external chips and less wiring and is less quirky than almost any other microprocessor. Also, it is widely used in education for those same qualities and of course for its low cost. Although the reader will become totally immersed in just one microprocessor, the 6800 family leading to the 68000 are all broadly similar, and restriction to the 6802 is justified if the essentials of using microprocessors are revealed.

Concentration on one application throughout the book gives the author the opportunity to be thorough and practical: indeed, the circuits are real. Why do other books not have similar circuits which can actually be expected to work? The greenhouse thermometer chosen for the design study is complicated enough to justify the 6802 for processing and display yet not so complex as to produce a morass of detail. Additional circuits for temperature measurement, analogue to digital conversion, and power supply are also considered part of the design and are fully treated. For good measure, appendices contain all necessary data sheets and a circuit for a simple EPROM programmer.

There is no doubt that Cahill has achieved his objective of stripping the subject of microprocessors of vast amounts of rarely used information. With well-defined purposes, he has produced a coherent core of sound engineering knowledge. His book should be recommended reading for all engineers - students, serious hobbyists, or those qualified before microprocessors became a regular part of all electronics courses.

P. R. Adhy

P. R. Adhy is lecturer in electrical engineering at King's College, London.

structure. Behindhand. Good design involves "intelligent" guesswork which is complicated in discrete systems by the presence of sampling. Leigh demonstrates methods for testing the effect of sampling on a discrete continuous design and for including the sampling of the output of the design, requiring an extra assumption. The various methods are well compared in two case-studies in chapter seven, concerning the temperature control (in BASIC) of an industrial oven and the control of metal strip from a rolling mill - two of the many real-life applications punctuating the text. It is a pity, however, that only simulation results are given to support the examples.

Control engineering demands skill in understanding industrial processes (and others), in control theory, real-time computing (hardware and software) and instrumentation, yet most relevant textbooks concentrate on only one of these aspects - to the extent that each topic can seem unconnected with what should be its companion subjects. A refreshing feature of Leigh's wide-ranging text is that it moves freely between all these different areas; and the connections do come across, or the reader is encouraged to make them for himself.

The penalty of wide coverage, however, is lack of depth; and in moving into multivariable and large-scale systems control in chapters eight to 11, such a price becomes obvious. Practice in executing multivariable design methods becomes highly dependent on using the well-selected bibliography. For the reader with some prior exposure to modern control theory, however, its potential for decomposing large-scale systems for interconnected multicomputer control is at least clarified. The case-studies in large-scale systems control in the final chapter are little more than lists of modern distributed computing equipment and software (albeit with some outline specifications and comment) that have been applied worldwide to some demanding industrial undertakings. These are well - though briefly - described and include chemical manufacture, paper-making, and steam, power and water generation and supply.

The merit of the book lies in its systems concept and its strong bias to practical application. Much detail must be sought elsewhere. I therefore recommend the book to students and practising engineers who have already studied some control.

J. B. Edwards

J. B. Edwards is reader in control engineering at the University of Sheffield.

CAMBRIDGE

Comprehensive Dictionary of Engineering and Technology Volume 1

François-Anglais
RICHARD ERNST

This is one of the most comprehensive technological dictionaries currently available. It is fully up-to-date and has a total of 159,142 entries. The author has been careful to place each term strictly within its own specialised field and all branches of modern industry are covered. SI units are used throughout. £70.00 net

Comprehensive Dictionary of Engineering and Technology Volume 2

English-French
RICHARD ERNST

Volume 2 contains carefully sifted vocabulary from the French-English volume, and has been significantly enlarged by the inclusion of terms relating to recent developments in technological fields such as space travel, nuclear technology, the environment and energy. £75.00 net

Contact Mechanics

K. L. JOHNSON

This treatise is concerned with the stresses and deformation of solid bodies in contact with each other. An important feature is the treatment of bodies which deform plastically or viscoelastically. In addition to stationary contact, an appreciable section of the book is concerned with the bodies which are in sliding or rolling contact, or which collide. £45.00 net

Cambridge University Press
The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, England

New and forthcoming Engineering titles from Edward Arnold

Water Supply

Third Edition
A. C. TWORT, F. M. LAW and F. W. CROWLEY
This well-established text covers all aspects of water supply technology, and gives full consideration to the two primary duties of ensuring an adequate supply of water and safeguarding its quality. ISBN 0 7131 3513 1 paper 576 pages 22 half-tones and 138 line diagrams £23.50 net

Digital Systems Design

D. G. WONG
This text provides an overview of the important field of digital systems design and presents the fundamental theory with design examples where applicable. ISBN 0 7131 3539 5 paper 256 pages Line diagrams £15.00 net Publication July 1985

Air Conditioning Engineering

Third Edition
W. P. JONES
This authoritative book covers not only the principles of air conditioning, but also the recent advances and changes that have taken place in air conditioning practice. ISBN 0 7131 3522 0 boards 630 pages 260 line diagrams £29.50 Publication July 1985

Digital Timing Circuits

J. B. COOLING
A consideration of the problems posed by timing restrictions in digital machines (e.g. digital computers) and the methods available for generation of timing waveforms and signals. ISBN 0 7131 3424 7 paper 128 pages Line diagrams 6.95 net Publication August 1985

Highways Volume 1 Traffic Planning and Engineering

Third Edition
C. A. O'FLAHERTY
Volume 1 covers the historical and administrative aspects of highways and has been substantially revised to include up-to-date developments in traffic planning and engineering. ISBN 0 7131 3526 3 paper 876 pages 131 line diagrams £17.50 net Publication September 1985

Edward Arnold
41 Bedford Square, London, WC1B 3DO

Stoichiometry and Thermodynamics of Metallurgical Processes

Y. K. RAO

This textbook provides a thorough and comprehensive introduction to stoichiometry and thermodynamics with special emphasis on applications to metallurgical processes. The author's approach is to introduce students early on to the fundamentals of the physical chemistry and thermodynamics of metallurgical processes and then gradually expand the treatment into progressively more advanced areas. The examples and exercises range from straightforward tests of theory, to simple numerical problems, to complex analyses of real processes. Every chapter is provided with a full and up-to-date set of references. About £25.00 net

Forthcoming (September)

Computational Methods for Integral Equations

L. M. DELVES and J. L. MOHAMED

This up-to-date and readable textbook gives an account of the techniques available for the numerical solution of integral equations. The authors devote their attention primarily to efficient techniques using high order approximations, taking particular account of situations where singularities are present. Some knowledge of numerical methods and linear algebra is assumed, but the book includes introductory sections on numerical quadrature and function space concepts. £35.00 net

Forthcoming (September)

Cambridge University Press

The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, England

UNIVERSITY OF ZIMBABWE

Applications are invited for the following posts:

Inaugural Professor/Chairman:
Department of Metallurgical Engineering
It is envisaged that the appointee to the Chair will be a specialist of academic repute with administrative, teaching and industrial experience. He will be required to secure and develop students within the Faculty of Engineering and to maintain close links with the Engineering community in Zimbabwe. Corporate Membership of the Institution of Mining and Metallurgy or other appropriate engineering institution is essential. Opportunities exist for consultancy work.

Inaugural Professor/Chairman:
Department of Mining Engineering
It is envisaged that the appointee to the Chair will be a Mining Engineer of academic repute with administrative, teaching and industrial experience. He will be required to secure and develop students within the Faculty of Engineering and to maintain close links with the Engineering community in Zimbabwe. Corporate Membership of the Institution of Mining and Metallurgy or other appropriate engineering institution is essential. Opportunities exist for consultancy work.

Professorship in the Department of Chemical Pathology
Evidence of critical and original research in chemical pathology and postgraduate teaching, as well as the capacity to conduct and stimulate interest in scientific research in an African setting would be desirable.

Lectureships/Senior Lectureships/Associate Professorships in the Department of Mining Engineering (4 posts)
Applicants should have at least an M.Sc. in Mining Engineering from a recognised university and be corporate members of the Institution of Mining Engineers or any other equivalent professional engineering institution. They should have at least two years' post-graduate research experience in Mining Engineering and at least three years' teaching experience in the appropriate Engineering field.

Department of Metallurgical Engineering (4 posts)
Applicants should have at least an M.Sc. in Metallurgical Engineering from a recognised university and be corporate members of the Institution of Mining Engineers or any other equivalent professional engineering institution. They should have at least two years' post-graduate research experience in Metallurgical Engineering and at least three years' teaching experience in the appropriate Engineering field.

Department of Physics (2 posts)
Post A: Applicants should have a B.Sc. Honours degree in Physics but preferably a Ph.D. The successful candidate is expected to teach at both undergraduate and postgraduate levels, as well as supervise M.Phil. and D.Phil. students in relevant research areas.
Post B: Applicants should have a B.Sc. Honours degree in Physics but preferably a Ph.D. The successful candidate must be competent to teach Electronics to B.Sc. undergraduates as well as supervise postgraduate research in Electronics. Preference will be given to a candidate with some previous industrial experience.

Department of Religious Studies, Classics and Philosophy
These posts are for full-time appointments. Successful candidates should have a Ph.D. or equivalent qualifications; have taught at University level for at least three years; and be conversant with a wide range of courses which should include Marxist Philosophy and Philosophy of Language.

Department of Physiology
Applicants should hold a B.Sc. (Hons) or equivalent higher degree in Physiology or a related discipline. Preference may be given to candidates with teaching and research experience in Endocrinology.

Salary Scales:
Associate Professor: Z\$11,800-Z\$20,076. Senior Lecturer: Z\$10,580-Z\$19,400. Lecturer: Z\$9,360-Z\$18,180. (including allowances).
(Medical) Lecturer: Z\$11,800-Z\$20,076. Senior Lecturer: Z\$10,580-Z\$19,400. Lecturer: Z\$9,360-Z\$18,180. (including allowances).
Lecturer: Z\$11,800-Z\$20,076. Senior Lecturer: Z\$10,580-Z\$19,400. Lecturer: Z\$9,360-Z\$18,180. (including allowances).

Appointments on the above scales according to qualifications and experience.
Conditional Service Agreements and short-term contracts are offered. Persons who are not Zimbabwean citizens may be appointed on short-term contracts for a period of up to three years, except for the two inaugural Professorships where the total period will be three years. **SIX COPIES OF APPLICATIONS** giving full personal particulars which should include full name, place and date of birth, personal qualifications, employment and addresses of three referees should be submitted to the Registrar, University of Zimbabwe, P.O. Box 167, Harare, Zimbabwe. Applications should be submitted to the Registrar, University of Zimbabwe, P.O. Box 167, Harare, Zimbabwe. Applications should be submitted to the Registrar, University of Zimbabwe, P.O. Box 167, Harare, Zimbabwe.

Closing date for receipt of applications is 12 JULY 1985, except for the sub-professional posts in Metallurgical Engineering which close on 31 JULY 1985. (70233)

Cranfield
Through advanced teaching and applied research, Cranfield has created a new technology and management which provide an agriculture and defence.

LECTURER/ SENIOR LECTURER in Electrical and Electronic Engineering

Applications are invited for the above post in the newly formed College of Manufacturing. Duties will include teaching on the MSc degree course in 'Design of Production Machines and Systems', the supervision of industrially sponsored project work, and contributions to specialised short courses for industry.

Applicants should have some industrial Engineering, a first degree in Electrical/Electronic Engineering, preferably a higher degree and Corporate Membership of the IEE, but above all a clear interest and ability in teaching.

The College is housed in a new purpose-designed building, and has excellent facilities for Microcomputer Systems Development, Simulation, CAD/CAM and Robotics.

Salary on the Lecturer Scale £7,520 - £14,925 (under review)
or **Senior Lecturer Scale £14,135 - £17,705 (under review)**

Informal enquiries to: Dr T W Shaw, College of Manufacturing, telephone Bedford (0234) 752783.

Application forms and further details available from the Personnel Department, Cranfield Institute of Technology, Bedford, MK43 0AL, telephone Bedford (0234) 750111 extension 3337, quoting reference 8070C.

College of Manufacturing

THE UNIVERSITY OF AUCKLAND New Zealand

Lectureship in Classics (3 Year Term)
Department of Classics and Ancient History
Closing date: 10 June 1985 or as soon as possible thereafter.

A Lectureship is available for persons whose primary interest is in Greek Literature, especially drama, and who have the ability to contribute to teaching programmes in one or more of the following fields: Literature in Greek (Classical Studies), Greek Art and Architecture, Greek History, Greek Philosophy, Linguistics, etc. Particular emphasis will be placed on the study of the Hellenistic period. At the end of the three-year term, the successful candidate will be offered a permanent position.

Lectureships in Mechanical Engineering
School of Engineering
Closing date: 1 September 1985.

The Department of Mechanical Engineering has two Lectureship vacancies. At present the Department is actively seeking applications in the area of fluid mechanics and heat transfer from persons qualified in any other area of mechanical engineering, including manufacturing and industrial engineering.

Lectureship in Theoretical and Applied Mechanics
School of Engineering
Closing date: 15 July 1985.

The Department is concerned with the theoretical modelling and computational solution of engineering problems; the two major fields of activity being Continuum Mechanics and Fluid Mechanics. Research Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Theoretical and Applied Mechanics.

Lectureships in Law
School of Law
Closing date: 31 July 1985.

Two vacancies exist in the Department of Law. Successful candidates should have a higher degree and previous experience in research, teaching and professional practice. The successful candidate will be required to teach and supervise postgraduate research in the field of Law. The successful candidate will be required to teach and supervise postgraduate research in the field of Law.

Lectureship in Property Administration
School of Law
Closing date: 31 July 1985.

Applicants should be academically qualified in a property discipline such as valuation, property management, urban economics, surveying, law, commerce, building or other relevant professional area and should have had practical teaching experience, and/or a postgraduate research experience in the appropriate Engineering field.

Lectureship/Senior Lectureship in Chemical and Materials Engineering
School of Engineering
Closing date: 31 July 1985.

Applicants should have a higher degree and have acquired all requirements for membership of the Institution of Chemical Engineers (London) or a similar professional body. The successful candidate will be required to teach and supervise postgraduate research in the field of Chemical and Materials Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Chemical and Materials Engineering.

Conditions of Appointment and Method of Application are available from the Registrar, University of Auckland, Private Bag, Auckland, New Zealand, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF.

Applications, in accordance with the Method of Application, should be forwarded as soon as possible, but not later than the closing dates stated.

(70234)

UNIVERSITY OF SWAZILAND

OFFICE OF VICE-CHANCELLOR

Applications are invited for the position of Vice-Chancellor of the University of Swaziland.

The University of Swaziland comprises two campuses which are 24 Kilometers apart. The main campus is in the Mkhumbane Valley in the home of the Faculty of Agriculture. The Mkhumbane Campus is situated outside Mkhumbane and houses the four other faculties, i.e. Education, Humanities, Science and Social Sciences. The enrolment of full-time students in the 1984/85 academic year was about 1,200 on both campuses.

The Vice-Chancellor is the academic and administrative head of the University, and is elected by the Council. He is appointed for a period of four years and is eligible for re-appointment.

Applicants should have extensive experience in educational administration at tertiary level in developing countries.

It is expected that the appointee will assume duty in April 1986 or as soon as possible thereafter. Applications should have been received by 31 July 1985. Applicants are asked to give the names and addresses of three referees.

The basic salary for this position is currently fixed at Z\$20,400 per annum. In addition, an appointee who is not pensionable will receive a gratuity of 25% of basic salary at the end of the first two-year term, and 27.5% at the end of the second term. An appointee who also receives an Indemnity Allowance at 10% of basic salary, education allowance for up to five children under 19 years of age; leave passages allowance.

The University will provide a house with full furnishings, rent-free, and a University car for University business.

Applicants are asked to write in confidence to: The Chairman of Council, c/o The Registrar, University of Swaziland, Private Bag, Kwaluseni, SWAZILAND, Southern Africa.

(70232)

UNIVERSITY COLLEGE DUBLIN

FACULTY OF LAW

Temporary Appointments 1985-6

Applications are invited for two temporary one-year (1985-86) appointments in the Faculty of Law, University College Dublin, September 1985. For one post candidates must be prepared to assume the main teaching duties in Criminal Law, as well as teaching in other areas of the Law. For the other post candidates must be prepared to assume the main teaching duties in Contract Law, as well as teaching in other areas of the Law.

The appointments will be made at the level of Assistant Lecturer. The current salary scale for an Assistant Lecturer is £5,800-£14,135. Salary will be in accordance with qualifications and experience.

Prior to application, details of application procedure should be obtained from the Secretary and Registrar, University College Dublin, Dublin 4, Ireland. The closing date for receipt of applications for both posts is Thursday, 27th June 1985.

(70001)

University College London

LECTURESHP IN ANCIENT HISTORY AND SOCIAL ANTHROPOLOGY

Applications are invited for a lectureship in Ancient History and Social Anthropology in the Department of History and Social Anthropology, University College London. The successful candidate will be required to teach and supervise postgraduate research in the field of Ancient History and Social Anthropology. The successful candidate will be required to teach and supervise postgraduate research in the field of Ancient History and Social Anthropology.

Encouragement will be given to candidates who have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Ancient History and Social Anthropology. The successful candidate will be required to teach and supervise postgraduate research in the field of Ancient History and Social Anthropology.

Applicants should hold a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Ancient History and Social Anthropology. The successful candidate will be required to teach and supervise postgraduate research in the field of Ancient History and Social Anthropology.

The post will be tenable from 1 October 1985. The current salary scale for an Assistant Lecturer is £5,800-£14,135. Salary will be in accordance with qualifications and experience.

Prior to application, details of application procedure should be obtained from the Secretary and Registrar, University College London, Gower Street, London WC1E 6BT. The closing date for receipt of applications for both posts is Thursday, 27th June 1985.

(70002)

University of Kent

LECTURER IN INTERNATIONAL RELATIONS

Applications are invited from candidates specialising in any branch of International Relations. The successful candidate will be required to teach and supervise postgraduate research in the field of International Relations. The successful candidate will be required to teach and supervise postgraduate research in the field of International Relations.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of International Relations. The successful candidate will be required to teach and supervise postgraduate research in the field of International Relations.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Strathclyde

DEPARTMENT OF ENGLISH STUDIES

TEMPORARY LECTURESHIP

Applications are invited for a one-year Temporary Lectureship in the Department of English Studies in the field of Applied Linguistics. The successful candidate will be expected to make a substantial contribution, in teaching and organisation, to a department's postgraduate instructional programme in the field of Applied Linguistics. It is expected that the successful candidate will have specialist research and teaching experience in the field of English Language Teaching and/or Teaching Literature Overseas.

Salary on Lectureship scale (£7,520-£14,925 per annum). US benefit.

Application forms and further particulars (quote Ref: 19/85) are available from Staff Office, McCance Building, University of Strathclyde, 16 Richmond Street, Glasgow G1 1XQ.

Closing date for applications: 5 July 1985.

(70198)

University of Kent

CHAIR OF OCEANOGRAPHY

Applications are invited for the Chair of Oceanography which will become vacant on the retirement of Professor H. Tomlin, FRGS, on 30 September 1986.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

Universities continued

The University of Sheffield

TEMPORARY LECTURER IN NEW TESTAMENT

Applications are invited for a temporary lecturer post in the Department of Biblical Studies from 1 October 1985 to 30 September 1986. The successful candidate will be expected to make a substantial contribution, in teaching and organisation, to a department's postgraduate instructional programme in the field of New Testament Studies. It is expected that the successful candidate will have specialist research and teaching experience in the field of New Testament Studies.

Salary on Lectureship scale (£7,520-£14,925 per annum). US benefit.

Application forms and further particulars (quote Ref: 19/85) are available from Staff Office, McCance Building, University of Strathclyde, 16 Richmond Street, Glasgow G1 1XQ.

Closing date for applications: 5 July 1985.

(70198)

University of Kent

CHAIR OF OCEANOGRAPHY

Applications are invited for the Chair of Oceanography which will become vacant on the retirement of Professor H. Tomlin, FRGS, on 30 September 1986.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography. The successful candidate will be required to teach and supervise postgraduate research in the field of Oceanography.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

University of Kent

LECTURER IN ELECTRONIC ENGINEERING

The University has recently established a second Chair in the Department of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Applicants should have a first degree in one of the above fields, and a postgraduate research experience in one of the above fields. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering. The successful candidate will be required to teach and supervise postgraduate research in the field of Electronic Engineering.

Further particulars and application forms are available from the Registrar, University of Kent, Canterbury, Kent CT2 7NW, or from the Secretary General, Association of Universities, 21 Gordon Square, London WC1H 0PF. Applications should be forwarded as soon as possible, but not later than the closing dates stated.

(70197)

The City University

Universities continued

University of Essex

Department of Applied Mathematics and Theoretical Physics

RESEARCH ASSISTANT

This post, limited by salary, involves work in the continuation of an Atomic Data Bank for basic atomic data which will be used in a number of branches of theoretical physics including atomic physics, nuclear physics, and astrophysics. Extensive use of computers will be involved. The Data Bank is set up on a local VAX 11/70, and the user is to capture data from a central file at the University of London Computer Centre via data links.

Applicants must have a good honours degree and postgraduate research experience in a relevant field. Knowledge of atomic physics, astrophysics, or information retrieval would be an advantage.

Salary up to £9,350 per annum. The post is available for one year starting as soon as possible.

Further information, within the reference, should be sent to the Personnel Office, University of Essex, Wivenhoe, Colchester, Essex, CO1 1NS. Closing date: 1st July 1985. (150703)

The University of Hull

ACADEMIC REGISTRAR

Applicants are invited to apply for the post of Academic Registrar in the Office of the Registrar. The successful candidate will be responsible for the day-to-day running of the office and will be expected to have a good knowledge of the University's regulations and procedures. The post is a full-time position and involves a significant amount of clerical and administrative work. The salary is £11,000 per annum.

Further information, within the reference, should be sent to the Registrar, The University of Hull, 68-70, The Boulevard, Hull, HU1 1UH. Closing date: 30th June 1985. (150704)

Personal

IMMEDIATE ADVANCES £100 to £200,000. We have a large number of properties for sale in the South East. Call 01-234 5678 for more details.

LOANS TO SALARIED WOMEN from £500 to £10,000. We offer low interest rates and flexible repayment terms. Call 01-234 5678 for more details.

Fellowships

Aston University

RESEARCH FELLOW

Applications are invited for a Research Fellow in the Department of Computer Science. The successful candidate will be responsible for the development and implementation of a software tool for the analysis of computer systems. The post is a full-time position and involves a significant amount of research and development work. The salary is £12,000 per annum.

Further information, within the reference, should be sent to the Department of Computer Science, Aston University, Birmingham, B4 7ET. Closing date: 1st July 1985. (150705)

University of Surrey

POSTDOCTORAL RESEARCH FELLOWSHIP

Applications are invited for a Postdoctoral Research Fellowship in the Department of Chemistry. The successful candidate will be responsible for the development and implementation of a new method for the analysis of chemical samples. The post is a full-time position and involves a significant amount of research and development work. The salary is £13,000 per annum.

Further information, within the reference, should be sent to the Department of Chemistry, University of Surrey, Guildford, Surrey, GU1 2TA. Closing date: 1st July 1985. (150706)

Business Services

DRY CLEANING

For more information, call 01-234 5678.

Fellowships continued

Oxford

JUNIOR RESEARCH FELLOWSHIP AND SENIOR SCHOLARSHIPS 1986

The college proposes to present itself to the University of Oxford for the award of Junior Research Fellowships and Senior Scholarships in 1986. These awards are open to both men and women. The Junior Research Fellowship is a full-time position and involves a significant amount of research and development work. The salary is £14,000 per annum. The Senior Scholarship is a part-time position and involves a significant amount of research and development work. The salary is £12,000 per annum.

Further information, within the reference, should be sent to the Department of Chemistry, University of Oxford, Oxford, OX1 3PS. Closing date: 1st July 1985. (150707)

Polytechnics

NEWCASTLE UPON TYNE POLYTECHNIC

LECTURER II (2 posts)

Applications are invited for two posts of Lecturer II in the School of Business Administration. The successful candidates will be responsible for the teaching and supervision of students in the areas of business administration and management. The posts are full-time positions and involve a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Personnel Office, Newcastle upon Tyne Polytechnic, Newcastle upon Tyne, NE1 8ST. Closing date: 1st July 1985. (150708)

SOUTH BANK POLYTECHNIC

DEPARTMENT OF MODERN LANGUAGES

LECTURER II in SPANISH

Applications are invited for a Lecturer II in Spanish in the Department of Modern Languages. The successful candidate will be responsible for the teaching and supervision of students in the area of Spanish. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Modern Languages, South Bank Polytechnic, Borough Road, London SE1 0AA. Closing date: 1st July 1985. (150709)

DUNDEE COLLEGE OF TECHNOLOGY

DEPARTMENT OF MOLECULAR & LIFE SCIENCES

LECTURESHIP IN NURSING

Applications are invited for a Lectureship in Nursing in the Department of Molecular & Life Sciences. The successful candidate will be responsible for the teaching and supervision of students in the area of nursing. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Molecular & Life Sciences, Dundee College of Technology, Dundee, DD1 1HQ. Closing date: 1st July 1985. (150710)

Independent Colleges

Lancing College

MATHEMATICS

A well qualified graduate in Mathematics is required for the post of Lecturer in Mathematics. The successful candidate will be responsible for the teaching and supervision of students in the area of Mathematics. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Mathematics, Lancing College, Lancing, Sussex, BN15 9QJ. Closing date: 1st July 1985. (150711)

THE POLYTECHNIC OF CENTRAL LONDON

SENIOR LECTURESHIP IN FINANCIAL ASPECTS OF MANAGEMENT REF A1

Applications are invited for the following academic vacancies: SENIOR LECTURESHIP IN FINANCIAL ASPECTS OF MANAGEMENT REF A1. The successful candidate will be responsible for the teaching and supervision of students in the area of financial aspects of management. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Management Studies, School of Business & Public Management, Polytechnic of Central London, Uxbridge, Middlesex, UB8 3PH. Closing date: 1st July 1985. (150712)

SENIOR LECTURER IN ECONOMICS

Applications are invited for a Senior Lecturer in Economics in the Department of Management Studies. The successful candidate will be responsible for the teaching and supervision of students in the area of economics. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Management Studies, School of Business & Public Management, Polytechnic of Central London, Uxbridge, Middlesex, UB8 3PH. Closing date: 1st July 1985. (150713)

FIVE LECTURESHIPS IN COMPUTER SCIENCE REF B

Applications are invited for five Lectureships in Computer Science in the Faculty of Engineering & Science. The successful candidates will be responsible for the teaching and supervision of students in the area of computer science. The posts are full-time positions and involve a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Faculty of Engineering & Science, Polytechnic of Central London, Uxbridge, Middlesex, UB8 3PH. Closing date: 1st July 1985. (150714)

LII/SL IN ARABIC THOUGHT AND LITERATURE REF C

Applications are invited for a Lecturer in Arabic Thought and Literature in the Faculty of Languages. The successful candidate will be responsible for the teaching and supervision of students in the area of Arabic thought and literature. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Faculty of Languages, Polytechnic of Central London, Uxbridge, Middlesex, UB8 3PH. Closing date: 1st July 1985. (150715)

PRINCIPAL LECTURER IN LAW REF D

Applications are invited for a Principal Lecturer in Law in the Faculty of Law. The successful candidate will be responsible for the teaching and supervision of students in the area of law. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Faculty of Law, Polytechnic of Central London, Uxbridge, Middlesex, UB8 3PH. Closing date: 1st July 1985. (150716)

Teesside Polytechnic

DEPARTMENT OF BUSINESS AND PROFESSIONAL STUDIES

LECTURER II/SENIOR LECTURER IN BUSINESS ORGANISATION

Applications are invited for a Lecturer II or Senior Lecturer in Business Organisation in the Department of Business and Professional Studies. The successful candidate will be responsible for the teaching and supervision of students in the area of business organisation. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Business and Professional Studies, Teesside Polytechnic, Middlesbrough, Cleveland, TS1 1BA. Closing date: 1st July 1985. (150717)

LECTURER II/SENIOR LECTURER IN ECONOMICS (Two Posts)

Applications are invited for two posts of Lecturer II or Senior Lecturer in Economics in the Department of Business and Professional Studies. The successful candidates will be responsible for the teaching and supervision of students in the area of economics. The posts are full-time positions and involve a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Business and Professional Studies, Teesside Polytechnic, Middlesbrough, Cleveland, TS1 1BA. Closing date: 1st July 1985. (150718)

LECTURER II or SENIOR LECTURER IN ACCOUNTANCY

Applications are invited for a Lecturer II or Senior Lecturer in Accountancy in the Department of Business and Professional Studies. The successful candidate will be responsible for the teaching and supervision of students in the area of accountancy. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Polytechnics continued

RESEARCH AT NEWCASTLE UPON TYNE POLYTECHNIC

Research Assistant - should hold or expect to obtain a good honours degree in an appropriate discipline and be willing to register for a higher degree (MPhil or PhD); Research Fellow - should hold a higher degree and preferably some previous research experience; Senior Research Fellow - should hold a higher degree and have previous post graduate research experience.

Where a specific discipline is not mentioned, applicants are welcome from the discipline area covered by the Schools who will be running the project.

For informal discussions please contact the person named for each project. Telephone Newcastle (0632) 326002.

RA2/85 Business Analysis

"A Study of the changing role of Manufacturing Management due to the adoption of new manufacturing technology." Research Assistant, Engineering or Business related discipline. Contact Martin Tyson Ext. 3327.

RA2/85 Maths and Statistical Operations Management

"Inventory Control Systems for an Expanding Company." Research Assistant, Appropriate discipline with interest in Operational Research. Contact Mr. G. Harding Ext. 3349.

RA4/85 Maths and Statistics

"Flow-induced Vibration of Tube Arrays in Heat Exchangers - development of mathematical models." Research Assistant, Mathematics or related discipline. Contact Dr. N. Tonks Ext. 3348.

RA5/85 Computing and Informatics

"Design and Implementation of an Automated Software Testing Tool." Research Assistant, Computer Science or related discipline. Contact Mr. D. Livingstone Ext. 3347.

RA6/85 Accounting/Business Analysis

"Information Technology and Management Accounting." Research Assistant, Accounting, Economics or Business Studies. Contact Mr. R. Dixon Ext. 3321 or Mr. G. Hawkins Ext. 3320.

RA7/85 Maths and Statistical/Power Engineering

"An Experimental Study of Floating Ring Bearings and their application to large Turbine Generators." Two posts of Research Assistant, Mathematics Graduate to conduct theoretical study plus a Graduate in an appropriate Engineering subject to conduct the experimental study. Contact Dr. G. Hayden Ext. 3349 or Dr. A. Crisp Ext. 3367.

RA8/85 Economics

"A Study of the Economic Development and Employment Potential of the Local Economy." Research Assistant in Economics or a related discipline, interest in urban and regional studies. Contact Mr. A. Jenson Ext. 3336.

RA9/85 Behavioural Science

"Anti-smoking propaganda: its Effectiveness and the Role of Personality and Motivation Factors." Research Assistant, Graduate in Psychology. Contact Dr. D. Watson or Dr. B. Bell Ext. 4444.

RA10/85 Health Studies

"Assessment Profile to Evaluate Professional Competence in Health Care - Physiotherapy and Occupational Therapy." Research Assistant, Science or Social Science Graduate with interest in Health Care or Health practitioners with research or computing experience. Contact Mr. L. Goldstone Ext. 3431 or Miss J. Potts Ext. 3438.

RA11/85 Chemical and Life Sciences

"Development of Novel Chemical Procedures for Rapid Identification of Micro-organisms of Medical and Industrial Importance." Research Assistant, Graduate in Chemistry, Biochemistry or Chemical Microbiology. Contact Dr. A.L. James Ext. 3518.

RA12/85 Chemical and Life Sciences

"Biologically Active Metal Complexes." Research Assistant, Contact Mr. E.S. Raper Ext. 3516.

RA13/85 Chemical and Life Sciences/Physics

"Raman Spectroscopic Studies of optical fibres and thin films." Research Fellow, Contact D.J. Gardner Ext. 3516.

RA14/85 Chemical and Life Sciences/Applied Consumer Science

"Novel Polymeric Organometallic Flame Retardants." Research Assistant, Graduate in Chemistry. Contact Dr. P. Carby Ext. 3549 or Dr. E. Metcalfe Ext. 3551.

SUNDERLAND POLYTECHNIC

ACADEMIC ADMINISTRATION

ASSISTANT REGISTRAR - RESEARCH

Salary: £10,947 - £11,017

The successful applicant will be a graduate and responsible to the Academic Registrar for the provision of administrative support in all matters associated with the Research Degrees Registry and also in pursuance of the Polytechnic's Research Policy.

ADMINISTRATIVE ASSISTANT

Salary: Scale 5/6 £7524 - £8114

The person appointed to this new post will be a graduate and responsible to the Academic Registrar for the development and maintenance of a comprehensive filing system for all Polytechnic courses and other statistical information, and will assist in the preparation of documentation for the Academic Development Programme.

RESEARCH AT NEWCASTLE UPON TYNE POLYTECHNIC

Research Assistant - should hold or expect to obtain a good honours degree in an appropriate discipline and be willing to register for a higher degree (MPhil or PhD); Research Fellow - should hold a higher degree and preferably some previous research experience; Senior Research Fellow - should hold a higher degree and have previous post graduate research experience.

Where a specific discipline is not mentioned, applicants are welcome from the discipline area covered by the Schools who will be running the project.

For informal discussions please contact the person named for each project. Telephone Newcastle (0632) 326002.

RA15/85 Electronic Engineering

"Interface Design of High Speed Logic Circuits." Research Fellow, Experience and interest in C.A.D. of microwave circuits, computer assisted measurement, electrical and thermal properties of materials. Contact Dr. E. Korolukiewicz Ext. 3824.

RA16/85 Electronic/Power Engineering

"Flexible Automated Assembly based on the existing C.A.D. and Robotics facilities in the Polytechnic." Two posts of Research Assistant, Contact Mr. C. Smith Ext. 3627 or Mr. Crompton Ext. 3687.

RA17/85 Materials Engineering

"Environmental Effects on the Mechanical Stability of Silicon Nitride Ceramics." or "Optimization and Evaluation of Protective Coatings by means of a new Industrial Gas Turbine." Contact Dr. Data Ext. 3636. Project chosen will depend upon interest and suitability of candidate. Research Fellow.

RA18/85 Materials Engineering

"Design of Sulphidation-Resistant Alloys." Research Assistant, Contact Dr. Data Ext. 3636.

RA19/85 Materials Engineering/Physics

"Development of Titanium and Nickel as Load Bearing Implant Materials." Contact Dr. Data Ext. 3636. Research Fellow.

RA20/85 Power Engineering

"Geometric Modelling using Engineering Features." Two posts of Research Assistant and one Senior Research Fellow. Mechanical production engineering with interest and experience in computer applications desirable. Contact Dr. A.J. Leach Ext. 3685.

RA21/85 Physics

"Infrared Phosphide based Solar Cells." Research Fellow, Contact Prof. R. Hill Ext. 3660.

RA22/85 Physics

"Transmission of Power by Light with Photovoltaic Conversion to Electricity at the Point of Use." Research Assistant, Contact Prof. R. Hill Ext. 3660.

RA23/85 Visual Studies

"Art in a Public Context - Public Sculpture." Research Assistant, Qualified and experienced artist. Contact R.S. Bugg Ext. 3137.

Salary Ranges

Research Assistant - Researcher W £5940-£6567
Research Fellow - Researcher F £7545-£12029
Senior Research Fellow - (LII or SL) £11755-£13128

Placing on the salary scale is dependent upon qualifications or experience, as appropriate.

For further written details and application forms, returnable by 5 July 1985, please call our 24-hour telephone answering service (0632) 323208, or write enclosing a completed application form to the Academic Registrar, Newcastle upon Tyne Polytechnic, Elson Building, Elson Place, Newcastle upon Tyne NE1 8ST, to whom completed forms should be returned quoting the reference number.

Newcastle upon Tyne Polytechnic

STAFFORDSHIRE POLYTECHNIC

Department of Geography and Regional Studies

Applications are invited for a Lecturer in Geography and Regional Studies. The successful candidate will be responsible for the teaching and supervision of students in the area of geography and regional studies. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Geography and Regional Studies, Staffordshire Polytechnic, Stoke-on-Trent, Staffordshire, ST4 4DA. Closing date: 1st July 1985. (150719)

SUNDERLAND POLYTECHNIC

Faculty of Humanities

Department of Social Sciences

PRINCIPAL LECTURER IN PSYCHOLOGY

Salary: £13095 - £14580 BAF £10467 (under review)

Applications are invited for the above post from suitably qualified persons to provide academic leadership and to lead course development in psychology within the department. Applicants may have interests in any area of psychology, although an interest in applied social psychology may be a particular advantage.

An application form and further particulars may be obtained from the Personnel Officer, Sunderland Polytechnic, Langham Tower, Ryhope Road, Sunderland, SR2 7EE, or telephone (0783) 78231 Ext. 11. Closing date: 2 July 1985. (150720)

Sheffield City Polytechnic

DEPARTMENT OF BUSINESS STUDIES AND ECONOMICS

SENIOR LECTURER IN MARKETING

Applications are invited for a Senior Lecturer in Marketing in the Department of Business Studies and Economics. The successful candidate will be responsible for the teaching and supervision of students in the area of marketing. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

LECTURER II IN ECONOMICS (TEMPORARY)

The appointment is for a fixed term of one year commencing September 1985. The successful candidate will be responsible for the teaching and supervision of students in the area of economics. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

DEPARTMENT OF PUBLIC SECTOR ADMINISTRATION AND LAW

LECTURER II IN LEGAL STUDIES (TEMPORARY)

This is a two year fixed term appointment commencing September 1985. The successful candidate will be responsible for the teaching and supervision of students in the area of legal studies. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

DEPARTMENT OF APPLIED STATISTICS AND OPERATIONS RESEARCH

LECTURER II IN OPERATIONAL RESEARCH FOR BUSINESS

Applications are invited for a Lecturer II in Operational Research for Business in the Department of Applied Statistics and Operations Research. The successful candidate will be responsible for the teaching and supervision of students in the area of operational research for business. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

DEPARTMENT OF APPLIED PHYSICS

LECTURER II IN INFORMATION SYSTEMS

The department is a leading edge department with an increasing range of teaching and research work. The successful candidate will be a team developing Information Systems courses on a wide range of degrees of diploma. Applicants should be well qualified and have an interest in developing research.

DEPARTMENT OF MECHANICAL AND PRODUCTION ENGINEERING

LECTURER II/SENIOR LECTURER IN MANUFACTURING TECHNOLOGY (2 FIXED POSTS)

Applicants should possess a first degree, or its equivalent, together with experience in practice based research or development in the newer technologies such as Robotics, Mechanical Assembly or CNC Machine Tools. The successful candidate will be responsible for the teaching and supervision of students in the area of manufacturing technology. The posts are full-time positions and involve a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Mechanical and Production Engineering, Sheffield City Polytechnic, Sheffield, S1 1WB. Closing date: 1st July 1985. (150721)

STAFFORDSHIRE POLYTECHNIC

Department of Geography and Regional Studies

LECTURER II IN PSYCHOLOGY

Applications are invited for a Lecturer II in Psychology in the Department of Geography and Regional Studies. The successful candidate will be responsible for the teaching and supervision of students in the area of psychology. The post is a full-time position and involves a significant amount of teaching and supervision work. The salary is £14,000 per annum.

Further information, within the reference, should be sent to the Department of Geography and Regional Studies, Staffordshire Polytechnic, Stoke-on-Trent, Staffordshire, ST4 4DA. Closing date: 1st July 1985. (150722)

STAFFORDSHIRE POLYTECHNIC

Department of Geography and Regional Studies

The Polytechnic of North London

Appointment of DIRECTOR

A Director is required in January 1986. The Polytechnic of North London is a major public sector institution with national and international responsibilities. It also has a particular commitment to the social and economic needs of the inner city. This post offers complex challenges with positive opportunities. The salary will be in accordance with the recommendations of the Burnham Committee and is at present £30,915 (inclusive of London Allowance). Applications from candidates with experience in Education, Industry or Public Service will be welcomed. Further particulars can be obtained from the Clerk to the Court of Governors, The Polytechnic of North London, Holloway Road, London N7 8DB. Closing date for applications: 22 July 1985. PNL is an equal opportunities employer.

Bristol Polytechnic

Computing Studies & Mathematics Department

RESEARCHER A INFORMATION SYSTEMS

(A DEVELOPMENT METHODOLOGY FOR ADVANCED OFFICE INFORMATION SYSTEMS)

Applications from candidates with a first degree in Computing or a related discipline for this post. The successful candidate will be responsible for the development of a methodology for the design and development of advanced office information systems. The post is a full-time position with a salary of £15,000 per annum. Further details and an application form can be obtained from the Personnel Officer, Bristol Polytechnic, Coldharbour Lane, Fenchurch, Bristol BS1 6QY. Tel: 0117 325221. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Colleges and Departments of Art

Hampshire County Council

SOUTHAMPTON INSTITUTE OF HIGHER EDUCATION

FACULTY OF ART AND DESIGN

Re-advertisement

SENIOR LECTURER FOR BTEC AND HND IN FASHION

Salary Scale: £5,607 to £6,405 per annum. For further details and an application form, to be returned by 28th June 1985, contact the Personnel Officer, Southampton Institute of Higher Education, East Park Terrace, Southampton, SO8 4WW. Tel: (0703) 229381 Ext. 312. Closing date: 28 June 1985. (70311)

Colleges and Departments of Art continued

City of Newcastle upon Tyne

Education Committee

College of Arts and Technology

School of Art and Design

(Re-advertisement)

PRINCIPAL LECTURER

Applications are invited for the appointment of a Principal Lecturer in the School of Art and Design. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £14,500 per annum. Further details and an application form can be obtained from the Personnel Officer, City of Newcastle upon Tyne, Education Committee, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Inner London Education Authority

Camden School of Art and Design

PRINCIPAL LECTURER IN CERAMICS

The School is seeking to recruit a Principal Lecturer in Ceramics. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £14,500 per annum. Further details and an application form can be obtained from the Personnel Officer, Inner London Education Authority, Camden School of Art and Design, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Canterbury Christ Church College of Higher Education

PRINCIPAL LECTURER AND HEAD OF MATHEMATICS AND COMPUTING DEPARTMENT

Applications are invited for the above post to take effect from 1 January 1986. Salary: £13,096-£18,467 p.a. The college has over 1000 full-time students and offers BA, BEd, BSc, MA, MPhil/PhD degrees, certificates and short courses. For further details, enclosing a stamped addressed envelope, to whom applications should be sent not later than 8 July. (70318)

Rose Bruford College of Speech and Drama

TUTOR LIBRARIAN (LECTURER GRADE II)

Salary: £8,293-£13,774. To take charge of Special Theatre Library. Relevant degrees and professional qualifications essential. Further details and an application form from the Chief Librarian, Rose Bruford College, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

PLEASE MENTION THE T.H.E.S. when replying to advertisements

Colleges and Institutes of Higher Education

HAMPSHIRE COUNTY COUNCIL SOUTHAMPTON INSTITUTE OF HIGHER EDUCATION

Applications are invited from suitably qualified and experienced persons for the following Heads of Departments. The posts arise from the restructuring of the work of the Institute and the retirement of present Heads of Department.

Within the Faculty of Technology

SYSTEMS AND COMMUNICATIONS ENGINEERING

Head of Department Grade V

ENGINEERING AND NAVAL ARCHITECTURE

Head of Department Grade V

Within the Faculty of Business & Mathematics

FINANCIAL AND LEGAL STUDIES

Head of Department Grade V

PUBLIC AND SOCIAL ADMINISTRATION

Head of Department Grade V

MANAGEMENT AND COMPUTING

Head of Department Grade VI

Within the College of Maritime Studies

MARITIME OPERATIONS AND SAFETY

Head of Department Grade V

For further details and application forms apply to: THE PERSONNEL OFFICER, SOUTHAMPTON INSTITUTE OF HIGHER EDUCATION, EAST PARK TERRACE, SOUTHAMPTON SO8 4WW. Tel: (0703) 229381 Ext. 339. Closing Date: 24th June 1985. (70189)

Nene College Northampton

Faculty of Art and Design

Applications are invited for the post of

Senior Lecturer in Three Dimensional Design

with specific responsibility for the BTEC Ordinary National Diploma course in Design Crafts. The Faculty of Art and Design is a Grade V Department with a wide range of advanced and non-advanced studies of which BTEC courses occupy a key part. The appointed person should be both an experienced teacher of an associated field, and a practising designer/craftsman in towards the traditional crafts. It is expected that the successful applicant would be prepared to develop the work of the department towards the wider field of product design. The post generally will be available from 1st September 1985. Further particulars and application forms are available from: Mr. C. G. Smith, Dean of Faculty of Art and Design, Nene College, St. George's Avenue, Northampton NN2 6JD (0604 714101) to whom they should be returned within 10 days of this advertisement (SAC please). Salary scale £11,175-£13,125 (bar) currently under review. (70406)

CANTERBURY CHRIST CHURCH COLLEGE OF HIGHER EDUCATION

PRINCIPAL LECTURER AND HEAD OF MATHEMATICS AND COMPUTING DEPARTMENT

Applications are invited for the above post to take effect from 1 January 1986. Salary: £13,096-£18,467 p.a. The college has over 1000 full-time students and offers BA, BEd, BSc, MA, MPhil/PhD degrees, certificates and short courses. For further details, enclosing a stamped addressed envelope, to whom applications should be sent not later than 8 July. (70318)

Rose Bruford College of Speech and Drama

TUTOR LIBRARIAN (LECTURER GRADE II)

Salary: £8,293-£13,774. To take charge of Special Theatre Library. Relevant degrees and professional qualifications essential. Further details and an application form from the Chief Librarian, Rose Bruford College, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

PLEASE MENTION THE T.H.E.S. when replying to advertisements

THE DORSET INSTITUTE IS ONE OF THE LEADING INSTITUTES OF HIGHER EDUCATION IN THE COUNTRY.

DORSET INSTITUTE OF HIGHER EDUCATION LIBRARY SERVICES

TUTOR LIBRARIAN LI/SL

Salary Scale: £7848-£12089/£11776 - £13128 (bar) - £14061 (top review). We require a graduate Chartered Librarian to develop services and teaching programmes in a number of related subject areas. This is a challenging post, in a dynamic educational environment, which will provide considerable scope for individual initiative. Applicants should have considerable relevant experience, particularly in the development of teaching programmes. Closing date: Monday 8th July. Further details and application form from: Mrs. E. Dommett, Inst. 700, Dorset, BH12 6BB. Tel: (0202) 824111 ext. 308.

SOUTH GLAMORGAN COUNTY COUNCIL SOUTH GLAMORGAN INSTITUTE OF HIGHER EDUCATION (CARDIFF)

DEPARTMENT OF PHYSICAL EDUCATION AND HUMAN MOVEMENT STUDIES

APPOINTMENT OF LECTURER GRADE 2 (2 POSTS)

Applications are invited from suitably qualified persons for the following two appointments available from 1 September 1985: LECTURER GRADE 2: PHYSICAL EDUCATION/HUMAN MOVEMENT STUDIES. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, South Glamorgan Institute of Higher Education, Cyncoed Road, Cardiff CF2 2YD. Tel: (0222) 801111. Ext. 339. Closing Date: 24th June 1985. (70189)

HUMBERSIDE COLLEGE of Higher Education

School of Applied Social Studies

MENTAL HANDICAP Senior Lecturer

Applications are invited for this key post, which includes responsibility for the two-year full-time CNAA validated course in Mental Handicap. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, Humberside College of Higher Education, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

College of St. Mark & St. John

Temporary LII posts

(For Autumn 1985) (£7548-£12089) Applications are invited from suitably qualified persons for the following temporary posts (1 year in the Institute) in the Department of Education. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, College of St. Mark & St. John, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

SOCIOLGY (1 full time)

To be able to contribute to a wide range of Sociology courses (and possibly related STU/STUDIES) and to offer some of the following areas: Social Structure, Sociology of Knowledge, Sociology of the Individual, Medical, Cultural, Community Studies, Political Sociology. To teach some of the following modules in the Department of Sociology: History of Ideas, Ethics, Philosophy of Education, World Religions, Political Theory, Church History, Religious Education. Application forms and further particulars are available from: The Personnel Officer, College of St. Mark & St. John, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

RELIGION AND PHILOSOPHY

(1 full time and 1 at least half time) To teach some of the following modules in the Department of Religion and Philosophy: History of Ideas, Ethics, Philosophy of Education, World Religions, Political Theory, Church History, Religious Education. Application forms and further particulars are available from: The Personnel Officer, College of St. Mark & St. John, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

SCHOOL OF SCIENCE

BIOLOGY Lecturer II/ Senior Lecturer

Applications are invited from well qualified applied biologists to teach various aspects of biology, including microbiology and population dynamics, to honours degree level. Research and consultancy activities are encouraged. Further details and an application form can be obtained from: The Personnel Officer, School of Science, College of St. Mark & St. John, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Hampshire County Council SOUTHAMPTON INSTITUTE OF HIGHER EDUCATION

DEPARTMENT OF FINANCIAL AND LEGAL STUDIES

Temporary Lecturer II in Law

Applications are invited for the above post which is available for one year from 1st September 1985. Applicants should have a law degree or professional qualification; relevant teaching experience will be an advantage. Teaching will be in full and part-time students on professional and BTEC courses and will include company and property law. Salary Scale: Lecturer II £7,848 to £12,089. Application forms and further details from the Personnel Officer, Southampton Institute of Higher Education, East Park Terrace, Southampton, SO8 4WW. Telephone 0703 229381 Ext. 312. Closing date: 28th June 1985. (70318)

Cambridge College of Arts and Technology

Senior Lecturer 'A' IN LANGUAGES

Salary: £13,777 - £14,184 (bar) - £15,104 (Senior Lecturer 'A'). £13,777 - £14,184 (Lecturer 'A'). £13,777 - £14,184 (Lecturer 'A'). The person appointed will play a leading role in the teaching of French or German to business related postgraduate degree and higher diploma courses. The Senior Lecturer would assist in the administration of the Department and of courses. Applicants should hold a good Honours Degree in an appropriate language and have relevant teaching, business, industrial or administrative experience. An appointment will be made at either Senior Lecturer or Lecturer 'A' level. Closing Date: 21 June 1985. Application form and further particulars available from: The Personnel Officer, Cambridge College of Arts and Technology, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Napier College

A Scottish Central Institution

Department of Languages

SENIOR LECTURER 'A' IN LANGUAGES

Salary: £13,777 - £14,184 (bar) - £15,104 (Senior Lecturer 'A'). £13,777 - £14,184 (Lecturer 'A'). £13,777 - £14,184 (Lecturer 'A'). The person appointed will play a leading role in the teaching of French or German to business related postgraduate degree and higher diploma courses. The Senior Lecturer would assist in the administration of the Department and of courses. Applicants should hold a good Honours Degree in an appropriate language and have relevant teaching, business, industrial or administrative experience. An appointment will be made at either Senior Lecturer or Lecturer 'A' level. Closing Date: 21 June 1985. Application form and further particulars available from: The Personnel Officer, Napier College, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

University of London

SCHOLARSHIP FOR HUQUENOT RESEARCH

A 2500 scholarship is offered to a student who is a member of a Protestant denomination and is a native of a Protestant country. Conditions of award obtainable from the Institute of Statistical Research, Birkbeck College, University of London, Gower Street, London WC1E 7BT. (50785) R5

PLEASE MENTION THE T.H.E.S. when replying to advertisements

Colleges and Institutes of Higher Education continued

Cambridgeshire College of Arts and Technology

Department of Science

1. LECTURER IN COMPUTING

Required from 1st September 1985. Candidates should have an honours degree in an appropriate discipline or other qualification with practical experience. An ability to teach and develop the development of teaching programmes. Closing date: Monday 8th July. Further details and application form from: Mrs. E. Dommett, Inst. 700, Dorset, BH12 6BB. Tel: (0202) 824111 ext. 308.

2. LECTURER I IN GEOLOGY

Required from 1st September 1985. To teach either elementary and organic geochemistry or petrology and mineralogy to first year students. A strong interest in research and field work is necessary. Other teaching will include supervision of student projects. Development of links with industry is encouraged. Salary with L1 £5,910 - £10,112 (award pending), starting point according to qualifications and experience. Details and form, to be returned by 28th June, from: Administrative Assistant, Department of Science, Cambridgeshire College of Arts and Technology, Bridge Road, Peterborough CB1 1PT. Tel: (0233) 53555. (50781) R5

TRANSLATIONS WORK

BMOP. If you have a degree or equivalent knowledge of French or German, you can study at home for a career in translation. (Institutional) The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, Cambridgeshire College of Arts and Technology, Bridge Road, Peterborough CB1 1PT. Tel: (0233) 53555. (50781) R5

Colleges and Institutes of Technology

Lothian Regional Council

Napier College of Commerce and Technology

Department of Education

SENIOR LECTURER 'A'

Salary on scale £12,777 - £14,184 (bar) - £15,104. A vacancy now exists for a Senior Lecturer 'A' in the Department of Education. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, Napier College, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Examiners

Royal Society of Arts

John Adam Street

London WC2N 6EZ

EXTERNAL EXAMINERS REQUIRED FOR THE NEW DIPLOMA IN DRAMA AND THEATRE ARTS

To begin September 1985. We are looking for people with practical experience of drama and theatre arts, who are aware of the current educational provision and have experience of new developments. They should have experience of directing and examining at an appropriate level. For further details and an application form please contact: Mrs. Angela Finney on 01-330 8811. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Scholarships

University of London

SCHOLARSHIP FOR HUQUENOT RESEARCH

A 2500 scholarship is offered to a student who is a member of a Protestant denomination and is a native of a Protestant country. Conditions of award obtainable from the Institute of Statistical Research, Birkbeck College, University of London, Gower Street, London WC1E 7BT. (50785) R5

PLEASE MENTION THE T.H.E.S. when replying to advertisements

Courses

University of Surrey

Faculty of Science

DIPLOMA/M.Sc. IN CHEMICAL AND BIOCHEMICAL SCIENCES AND EDUCATION

A part-time course for teachers of biology and chemistry with at least three years' teaching experience. The course receives Local Authority support and will be in the 1985 list of Local Courses. 1985-86. Objectives: To extend teachers' knowledge in their own specialist areas and to allow them to teach a wider range of subjects by using practical and theoretical and chemical ideas in a wider context. Opportunities are offered to use new technology, including computers. Regular seminars in which teachers discuss common experience and new ideas in the presence of a staff tutor are an essential part of the course. Duration: Diploma 1 year, M.Sc. 2 consecutive years. Attendance: Once a week (afternoon and evening of the same day). Applications: For October 1985 can be made till 1st September 1985. Further information from: Dr. Doreen M. Parker, Course Administrator, Tel: Guildford 881, Ext. 804 or 8124 (50701) R5

Blackpool and Fylde College of Further and Higher Education

Faculty of Business, Food and Management

Re-advertisement

PRINCIPAL LECTURER MANAGEMENT STUDIES (Ref: BFM/4/4)

To take a leading role in the development and teaching of management programmes and BTEC Higher National Awards in Hotel Catering & Institutional Management. Closing date: 26th June, 1985. Lancashire County Council is an equal opportunities employer. (70307)

Gloucestershire College of Arts and Technology

Department of Social and Scientific Studies

School of Health and Social Care

LECTURER II/ SENIOR LECTURER IN DISTRICT NURSING

Applications are invited from suitably qualified and experienced persons to teach the District Nursing Certificate Course. The successful applicant will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, Gloucestershire College of Arts and Technology, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Cambridge Fitzwilliam College

HIRST PLAYER STUDENTSHIP

Applications are invited for a studentship to read for the Tripos or a higher degree in Chemistry at the University of Cambridge. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, Cambridge Fitzwilliam College, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Research and Studentships continued

University of Sheffield

Department of Chemistry, Glasses and Polymers

SERO RESEARCH STUDENTSHIPS

Applications are invited for 4 studentships available from October 1985. Applicants should have a good Honours degree in Chemistry, Materials Science or Physics and an interest in the science of polymers. Research opportunities are available. For further details and an application form please contact: Mrs. Angela Finney on 01-330 8811. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

AQUOTA STUDENTSHIP

To study structure/property relationships in a new generation of polymer modified cement. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, University of Sheffield, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

TWO CASE STUDENTSHIPS

To study the structure and high temperature chemistry of new carbon-graphite composite materials. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, University of Sheffield, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

A CASE STUDENTSHIP

To study the competitive properties of gasifier slugs. Other materials science research topics are available on request. For further information, please write to: Professor J.E. Bailey, Head of Department, Department of Chemistry, University of Sheffield, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

PLEASE MENTION THE T.H.E.S. when replying to advertisements

Colleges of Further Education

Blackpool and Fylde College of Further and Higher Education

Faculty of Business, Food and Management

Re-advertisement

PRINCIPAL LECTURER MANAGEMENT STUDIES (Ref: BFM/4/4)

To take a leading role in the development and teaching of management programmes and BTEC Higher National Awards in Hotel Catering & Institutional Management. Closing date: 26th June, 1985. Lancashire County Council is an equal opportunities employer. (70307)

Gloucestershire College of Arts and Technology

Department of Social and Scientific Studies

School of Health and Social Care

LECTURER II/ SENIOR LECTURER IN DISTRICT NURSING

Applications are invited from suitably qualified and experienced persons to teach the District Nursing Certificate Course. The successful applicant will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, Gloucestershire College of Arts and Technology, 100 Greyfriars, Newcastle upon Tyne, NE1 6RU. Tel: 0161 274 1111. Ext. 216 or 217. Please quote Reference number 9/85 in all correspondence. An Equal Opportunity Employer.

Cambridge Fitzwilliam College

HIRST PLAYER STUDENTSHIP

Applications are invited for a studentship to read for the Tripos or a higher degree in Chemistry at the University of Cambridge. The successful candidate will be responsible for the development and delivery of courses in the School. The post is a full-time position with a salary of £11,175-£13,125 (bar) currently under review. Further details and an application form can be obtained from the Personnel Officer, Cambridge Fitzwilliam College, 100 Greyfriars, Newcastle

